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ORIGINAL ARTICLES.

THE TUBERCULOSIS MOVEMENT IN WALES.

The Work of King Edward VII. Welsh National Memorial Association.

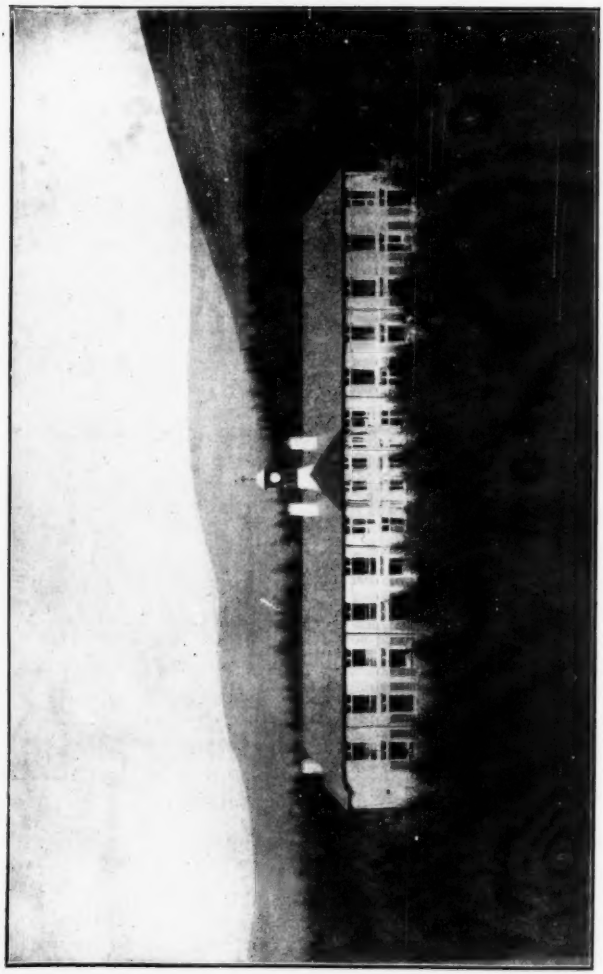
By MARCUS PATERSON,
M.D., B.S., M.R.C.S., L.R.C.P.,
Medical Director of the Association.

During the last few months great progress has been made in Wales in developing the national scheme for dealing with tuberculosis. The most urgent problem which confronts the Memorial Association is the provision of additional beds for tuberculous patients. Arrangements are being made to meet this need as speedily as possible. In South Wales there will be a sanatorium for 300 patients. Mr. Edwin T. Hall, of London, is the architect, and the plans are now ready. A very fine site has been secured in Breconshire, overlooking Talgarth, with the Black Mountains beyond. An equally good site in the Vale of Clwyd has been given to the Association by Mr. D. S. Davies, of Denbigh, for the North Wales Sanatorium of 184 beds. The design has been prepared by Mr. Taliesin Rees, of Liverpool.

Pending the completion of these institutions, efforts have been made to extend available accommodation, and the mansion-house on the Talgarth site has been opened as a temporary sanatorium with 52 beds. An extension has also been made at the West Wales Sanatorium, providing for 30 more beds.

Recently Glan Ely Hospital, containing 50 beds, has been opened

at Cardiff, and plans have been submitted for its extension to accommodate 110 patients. It is contemplated that a great many cases of non-pulmonary tuberculosis will be dealt with at this institution under



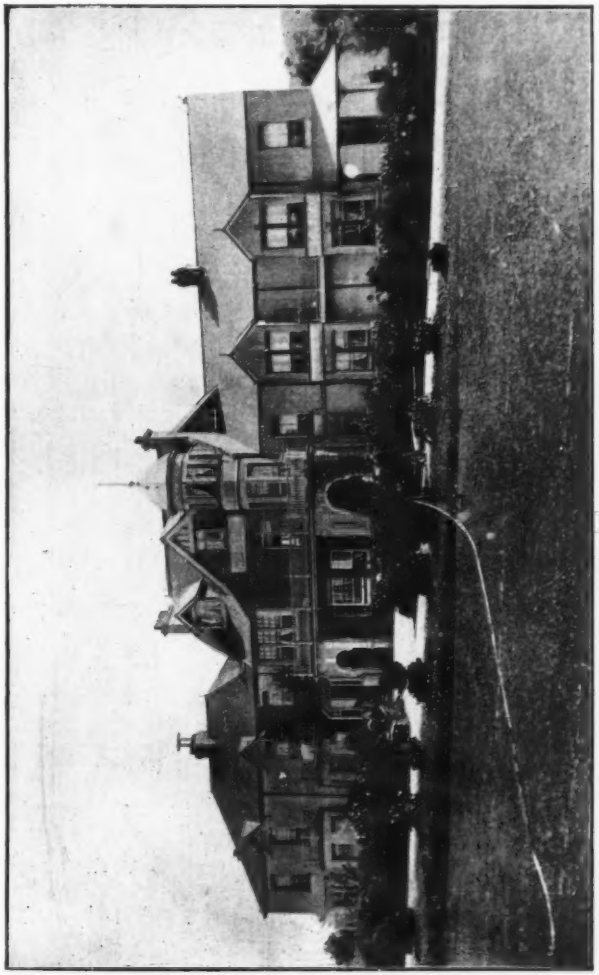
THE WEST WALES SANATORIUM, LLANYBYTHEN, CARMARTHENSHIRE.

the supervision of the Honorary Surgeon of the Association, Mr. J. Lynn Thomas, C.B., F.R.C.S.

Hospitals are also being built at Neath and Llangefni, which will give an additional accommodation for 44 patients. Sites have been

secured for hospitals at Swansea, Newtown, and Merionethshire, and the plans for these are being drawn.

There is an institute in each of the thirteen administrative districts,

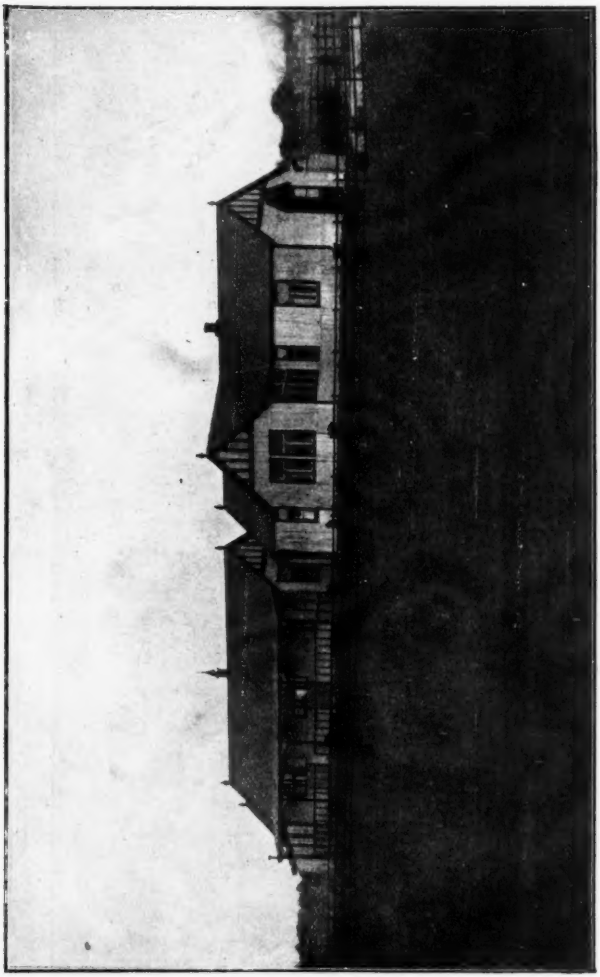


DOUSLAND GRANGE SANATORIUM, DOUSLAND, NEAR DARTMOOR, DEVON.
This sanatorium is reserved for Welsh cases.

together with a network of visiting-stations, visited on definite days at stated times. The time-tables of these stations are given the widest possible publicity.

The voluntary fund, augmented by contributions of Insurance

Committees in respect to insured persons, has enabled the Association to undertake the treatment of all persons in Wales. The County and County Borough Councils in Wales have all agreed, with one exception,

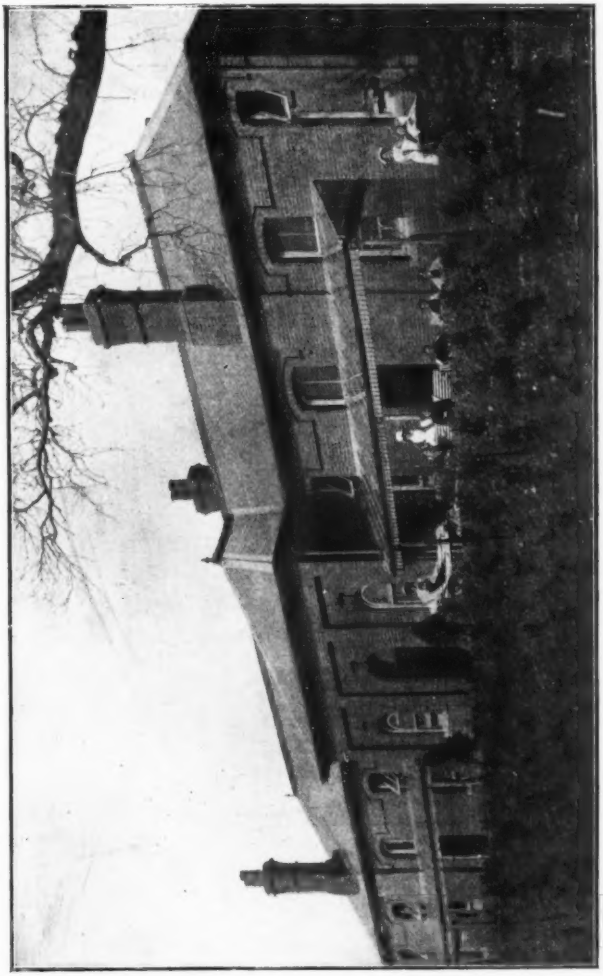


THE PENHESGYN OPEN-AIR HOME, MENAI BRIDGE, ANGLESEY.

to levy a rate on behalf of the treatment of the uninsured, to carry through upon certain conditions a complete scheme for all persons of all ages suffering from tuberculosis in Wales.

An integral part of this campaign is the continuance of the educa-

tional work which has been so well begun. The Tuberculosis Exhibition, after having traversed the entire Principality, has for the moment been discontinued, but is ready at any time to be sent out again when

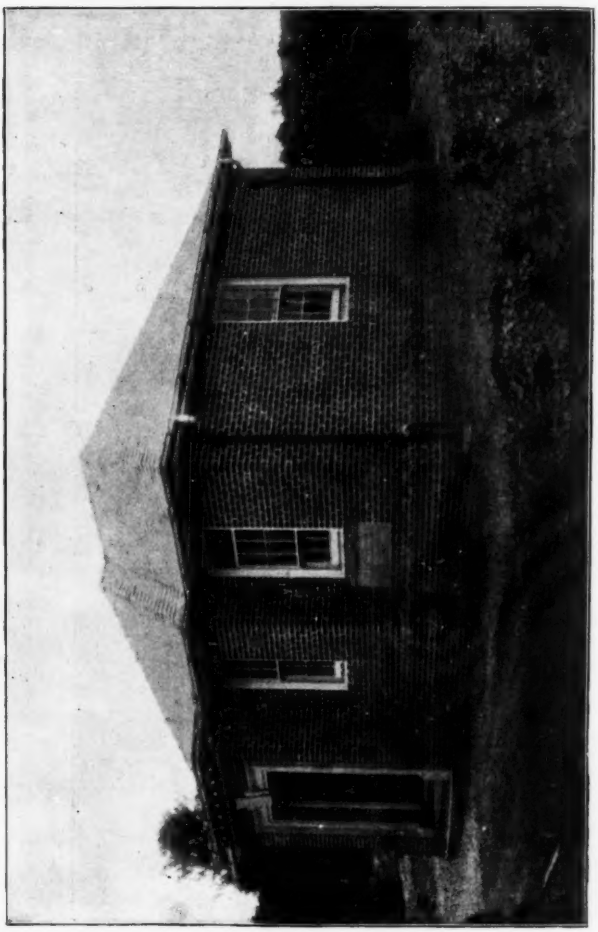


THE MARDY ISOLATION HOSPITAL, MERTHYR.
Twenty beds are reserved for Welsh tuberculous cases

required. At present the Superintendent of Education and his staff are concentrating upon the educational machinery of Wales. Conferences of teachers have been arranged, the attendance at which has been practically 100 per cent. of the teachers in each county concerned.

The County Councils look kindly upon this work, and are assisting in various ways, three Councils having agreed to pay the travelling expenses of the teachers attending the Association lectures.

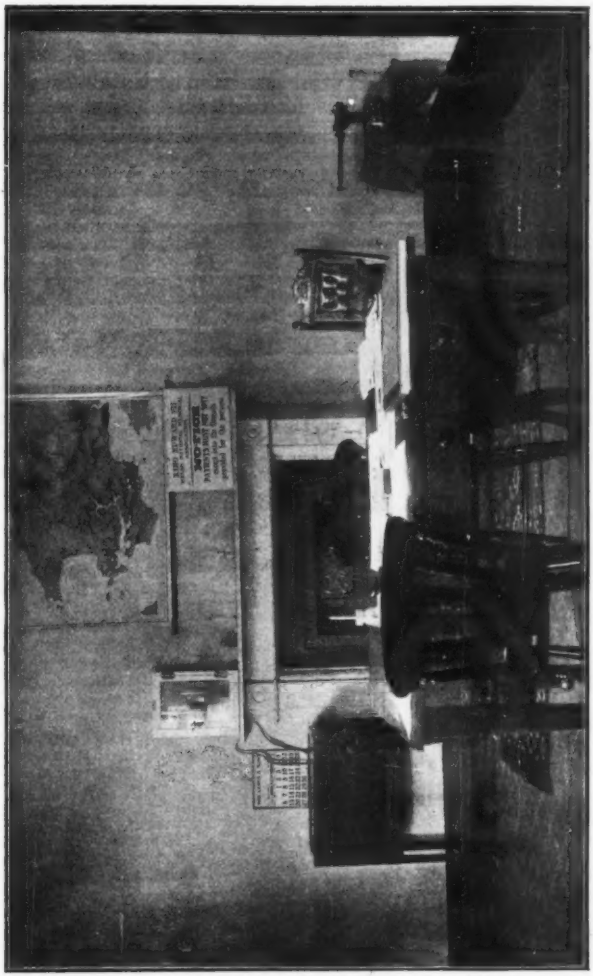
The tuberculosis physicians, by means of lectures to patients and



THE TUBERCULOSIS INSTITUTE, NEWTOWN, MONTGOMERYSHIRE.
This institute was erected at the expense of Mr. David Davies, M.P., the President of the Association.

friends and by open lectures, are keeping the public opinion, already well informed, daily alive to the ravages of tuberculosis. An encouraging feature of the educational work is that larger aspects of the problem, such as housing and preventative methods generally, have become vital points for public discussion.

A problem which has emerged during the year is the adequate provision of a nursing staff. It has been seen that the tuberculosis nurses cannot in the nature of things deal with the large number of



THE INTERIOR OF THE TUBERCULOSIS INSTITUTE, HAVERFORDWEST, PEMBROKESHIRE.

cases, spread over wide areas, which present themselves at the various institutions and visiting-stations; nor can they make the necessary number of domiciliary visits. In consequence the Association has enlisted the aid of all Nursing Associations throughout the Princi-

pality, and an agreement has been reached whereby the nurses will attend tuberculous patients.

It has been found necessary, in the interests of the patients, to issue a pamphlet to those who are recommended for treatment in sanatoria. This pamphlet, which is of considerable size, written both in English and in Welsh, contains a popular account of tuberculosis, the theory of auto-inoculation and graduated labour. The patients, after reading this pamphlet, sign a declaration, which is included, saying that they will co-operate to the best of their power with the Medical Superintendent, in order to effect restoration to health. By this preliminary education the instruction of patients at the sanatoria has been made easier.

The illustrations accompanying this article will explain themselves. They are reproduced from the pages of the "First Report of the King Edward VII. Welsh National Memorial Association," which was issued last autumn.

X-RAY WORK IN A TUBERCULOSIS DISPENSARY.

By J. A. PATRICK CULLEN,

M.D., M.R.C.S., L.R.C.P., D.P.H.,

Medical Officer of the Metropolitan Borough of Poplar Anti-Tuberculosis Dispensary.

The utility of the Roentgen rays in the diagnosis of chest affections, including tuberculosis, must now be regarded as beyond the range of controversy, and while it is not contended that an X-ray examination, apart from the history and clinical study of the case, will in every instance be enough by itself to make a diagnosis, yet the aid afforded by a suitable X-ray installation is such that no well-equipped tuberculosis dispensary can afford to be without one. Exigencies of space in a short article like the present forbid any attempt to cover the whole field of X-ray work as applied to the diagnosis of thoracic disease, yet it may be as well, at the commencement, to call attention to the principal features disclosed by the examination of a skiagraph of a normal chest as showing in the accompanying illustration (Fig. 1), and to point out the possibility of such pitfalls as occasionally give rise to errors.

A typical skiagraph of a healthy chest shows a lattice-work arrangement of the ribs with clear intervening spaces, due to the fact that the

healthy lung offers no resistance to the passage of the rays. Superimposed on this lattice foundation are certain dense shadows cast by the heart and the commencement of the aorta, the vertebral column, and the scapulæ, and these are easily recognizable as such with experience and a little care. On either side of the cardiac shadow, but more marked on the right than on the left, are two vertical lines, the pleuro-pericardial lines; the exact nature of these lines is still a matter of controversy. The important point to be borne in mind is that they

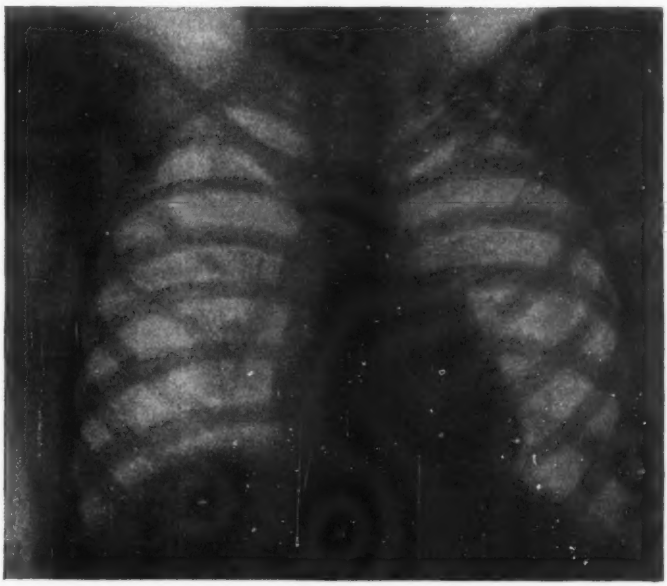


FIG. 1.—PHOTOGRAPH OF NORMAL CHEST.

are not pathological. Other shadows may be thrown by the mammary gland in well-developed females, and the axillary folds in muscular subjects, whilst a fairly common feature in persons exhibiting no other symptoms of disease is the presence of dark areas at the roots of the lungs, due in all probability to the existence of calcified tuberculous glands in these situations. (Fig. 1.)

Employment of X Rays in Pulmonary Tuberculosis.

In the early stages of tuberculous disease of the lungs one or other apex may exhibit a definite shading, with perhaps a dark mottling here and there. Closer examination will show that this shading is made up

by aggregation of the mottled areas. As the disease advances the mottling becomes more distinct, and has a characteristic woolly appearance, very typical when once seen, and probably the most trustworthy evidence of involvement of the lung. Failure of the apex of the affected side to light up on coughing, and limitation of the movements of the diaphragm, are also signs of some value when marked, and in the case of the latter when taken in conjunction with the previous history

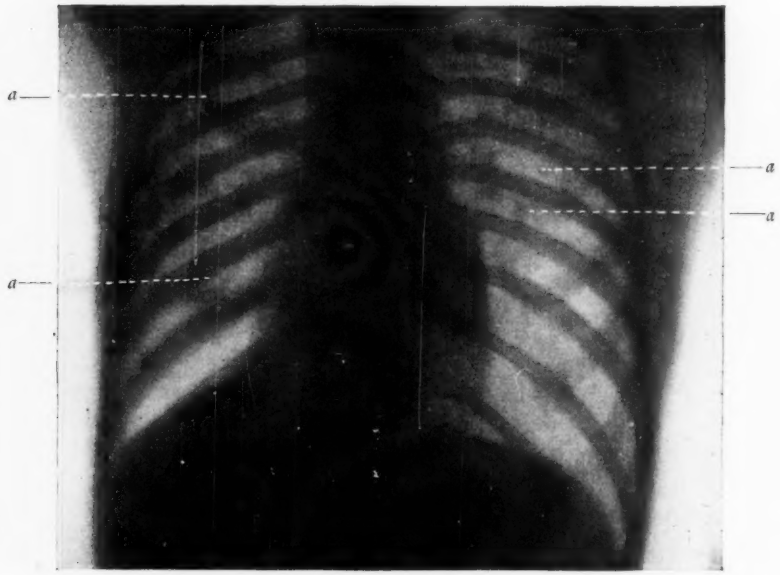


FIG. 2.—PULMONARY TUBERCULOSIS IN A CHILD.

Tuberculous nodules (*a a a a*) more closely aggregated at apices.

of the case and other factors disclosed by the physical examination (Fig. 2). In the later stages cavity formation and fibrosis give rise to characteristic features. Vomicæ with well-defined walls are often beautifully mapped out (Fig. 3), frequently of a size and at a depth not discoverable by other means; whilst when the process is extending the ragged indefinite outlines indicate the necrosis that is going on in the lung tissue, and furnish information not otherwise obtainable. Fibrosed lung, on the other hand, casts a dense shadow, on which sometimes darker lines indicate the thickened bands of fibrous tissue that traverse its substance; at the same time the cardiac shadow is displaced either to the right or the left as the case may be (Fig. 4).

Generally speaking, in any stage of the disease, screening will show that the extent of the lesion as discovered by the ordinary methods of examination has been underestimated, and verify for us a common experience of the post-mortem room.

Finally, in differential diagnosis the help afforded in many cases is great ; a few instances will suffice for illustration :

1. *Emphysema.*—The difficulty in deciding whether emphysema exists alone or has had tubercle grafted on it is well known. Ordinary methods of examination often fail to reveal the tuberculous focus in the

FIG. 3.—TUBERCULOSIS OF BOTH LUNGS.

A large tuberculous cavity with well-defined walls is shown at the left apex (*a*).

midst of distended lung tissue, yet in such cases the rays will frequently show dark patches in the midst of the abnormal brightness so characteristic of emphysema.

2. The presence of fever, wasting, sweating, with possibly apical râles in young children, may give rise to an erroneous diagnosis of pulmonary tuberculosis, whereas the condition may really be due to a basal empyema, which would, on screening, have revealed a very characteristic shadow.

3. Aneurysm of the arch of the aorta and malignant disease of the chest may each give rise to symptoms which can easily be confused

with those of pulmonary tuberculosis, and the diagnosis at the present day would be incomplete without an X-ray examination.

Further examples could no doubt be easily adduced, but it is to be

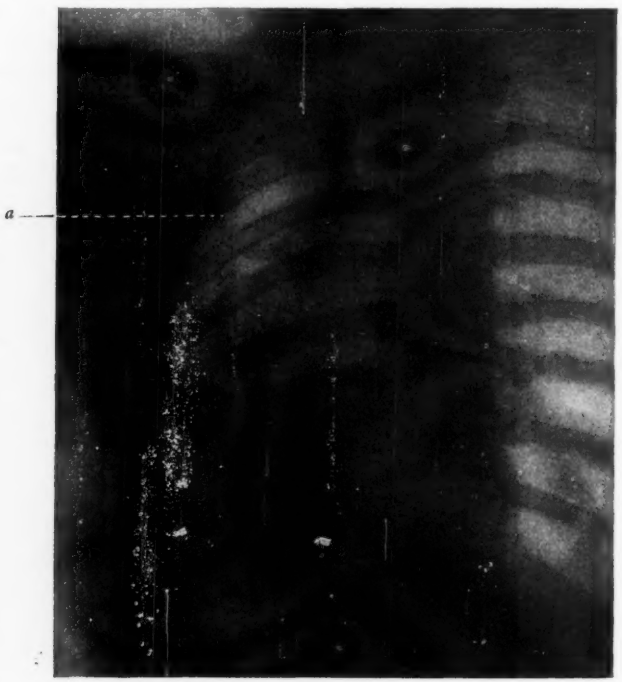


FIG. 4.—FIBROSIS OF THE LEFT LUNG WITH CARDIAC DISPLACEMENT.
Near the apex a large tuberculous vomica is shown (*a*).

hoped that those now brought forward will serve to show that an X-ray apparatus is an indispensable part of an up-to-date tuberculosis dispensary, and that no dispensary can be regarded as being fully equipped in which such an installation is absent.

THE DISINFECTION OF TUBERCLE-INFECTED HOUSES.

By A. MIDDLETON HEWAT,

M.D., D.P.H. (EDIN.),

Tuberculosis Officer and Assistant Medical Officer of Health for Preston, Lancashire; formerly Research Scholar and Resident Physician, Royal Victoria Hospital for Consumption, Edinburgh.

It is a recognized fact that the infection of tuberculosis can be transferred from one person to another through the agency of infected rooms, bedding, or clothing. Tubercle bacilli have been demonstrated on the walls and floors of a room occupied by a consumptive patient, and countless cases are on record of later occupants of a tuberculously infected room becoming tuberculous.[1] Kirchner says: "When the dead man is carried out of the house, a fatal inheritance is left behind for those that live there after him."

In Manchester and Berlin special work has been carried out in regard to this question, and in order to estimate the probability of house infection dust was collected from rooms occupied by patients suffering from pulmonary tuberculosis, and guinea-pigs were inoculated from this dust.[2]

TABLE INDICATING RESULTS OF INOCULATION EXPERIMENTS WITH TUBERCULOUS HOUSE DUST.

Number of Houses examined.	Positive Results.	Negative Results.	Per Cent. of Positives.
A. *In Berlin.*			
28	19	9	67
B. *In Manchester.*			
31	19	12	61

It is thus seen from the above numbers that in the great majority of rooms occupied by phthisis patients, unless scrupulous care and cleanliness are enforced, there are possibilities for the infection of other persons. Under these circumstances it is clearly necessary to mitigate as far as possible this source of infection. Let us consider the position of the local Sanitary Authority in regard to the matter.

In England tuberculosis is now a compulsorily notifiable disease, but it differs from other notifiable diseases in that the Local Government Board has issued special regulations defining the duties of the

[1] Bandelier and Roepke: "A Clinical System of Tuberculosis." London: John Bale, Sons and Danielsson, Ltd. 1913.

[2] Coates, H.: "Thesis for the Doctorate of the Victoria University of Manchester." 1901.

local authority.[1] In these regulations it is clearly stated that no enactment must be enforced which will render the patient or his relatives liable to a penalty. The Local Government Board has given the opinion that this prevents a local Sanitary Authority from enforcing disinfection of premises if the patient or his relatives object. A few towns, however, have got over this difficulty by getting powers for compulsory disinfection under Local Acts of Parliament. The procedure usually followed in most towns is as follows: On receiving notice of the death of any person from tuberculous disease, a sanitary inspector calls at the house and requests the occupier to permit the disinfection of the rooms occupied by the deceased. He at the same time explains fully the infectious nature of the disease, and the great need for disinfection in the interest of the health of the present and future occupiers. In the majority of cases no opposition is offered, and disinfection is accordingly carried out. Should, however, the occupier refuse to accede to the requests of the Health Department, nothing further can be done. It is unfortunately impracticable to disinfect the house before it is occupied by a future tenant, unless the new tenant has known of the existence of the disease, and requests the Health Department to perform disinfection. It is quite impossible for the Health Department to receive notice of all changes in tenancy of tuberculously infected houses after the death of the patient. While the patient is alive, and the case being periodically visited by a nurse or other official, notices of removal are of course available, and the house is accordingly disinfected unless the new tenant objects. In Scotland, by means of Sections 46, 47, 48, and others of the Public Health (Scotland) Act, 1897, the Medical Officer of Health has now full powers as regards disinfection of tuberculously infected houses, etc., and does not require to obtain the consent of the patient or his relatives.

Pulmonary tuberculosis being a disease of such long duration, it seems essential that disinfection should also be carried out previous to the death of the patient. At what periods and in what circumstances such disinfection should be performed is a matter of opinion, but I suggest the following as the most essential: (1) On receipt of notification, (*a*) the bedroom, and preferably also the sitting-room occupied by the patient, should be disinfected; (*b*) all bedding which has been used by the patient, and which is going to be used for other members of the household, should be disinfected; (*c*) the work-place of the patient should be disinfected, unless the patient still remains at work. (2) At frequent intervals, if patient is treated at home, all rooms occupied by him since the first disinfection may with advantage be again disinfected.

[1] For copies of these see "Forty-Second Annual Report of the Local Government Board, 1912-1913." Vol. III. London: Wyman and Sons, Ltd. 1913. Price 2s. 5d.

(3) On the removal of the patient to a sanatorium, or other hospital, the house, bedding, clothing, and all utensils used by the patient should be disinfected. (4) On the removal of the patient to another house, the house previously occupied must be disinfected. (5) On the death of the patient, thorough disinfection of house, bedding, etc., should be performed. It is also important that the disinfection should not be left to the patient's relatives or friends, but that it should be undertaken by a thoroughly experienced member of the sanitary staff.

Apart altogether from the disinfection of houses known to be infected with tuberculosis, it is well for the Medical Officer of Health, if possible, to cause disinfection to be performed periodically in places which he has reason to suspect may be the cause of spreading infection. In this regard, particular attention should be paid to public-houses, churches, theatres, public halls, schools, railway-stations, tramcars, railway-carriages, and vehicles for public conveyance. In several towns it is the custom to wash out the tramcars nightly with a disinfectant solution, and although it is doubtful whether the solution used is of sufficient strength for bactericidal purposes, the practice is certainly one to be encouraged.

It may be as well to consider here what constitutes really efficient disinfection when undertaken to destroy the tubercle bacillus. Various authorities hold various opinions on the subject, and different methods are employed by different municipalities. The question resolves itself into two main divisions—firstly, gaseous disinfection; and, secondly, wet disinfection. Among the gaseous disinfectants, one commonly used is sulphur, or, more accurately, sulphurous acid vapour. Delépine[1] has tested the effect of this method of disinfection with regard to tubercle bacilli. He used 1 pound of sulphur to 825 cubic feet of space, and exposed the tuberculous material for four hours. Out of six experiments, the material remained virulent in four cases—*i.e.*, in 66 per cent. of the experiments disinfection was not efficient. Another gaseous disinfectant which was formerly used to some extent, especially in Manchester, is euchlorine. This is generated by means of crude hydrochloric acid acting upon chloride of lime. Delépine[2] conducted thirteen experiments with this method of disinfection for tubercle bacilli. In 11 cases the material remained virulent—*i.e.*, in 84 per cent. of cases disinfection was not efficient. The disinfection was performed in the usual way by members of the Manchester sanitary staff.

Formic aldehyde, or formaldehyde, is another gaseous disinfectant. A special lamp is necessary for this method, into which methyl alcohol is poured, the methyl alcohol vapour being made to pass over finely

[1] Delépine, S.: *British Medical Journal*, February 16, 1895.
[2] *Ibid.*, November 4, 1893.

divided platinum. Trillat's autoclave is a well-known form of this apparatus. More recently special formaldehyde tablets have been put on the market, which are burnt in "Alformant" lamps. Twenty-five tablets are used to every 1,000 cubic feet of space.

The Sanitas Company has also brought out a very convenient method of formaldehyde generation, known as the "Formitas Outfit." In this a solution of formaldehyde is made to act on a block of permanganate of potash. Thresh has tested this appliance against the tubercle bacillus, and reports that disinfection is efficiently carried out. Delépine[1] sums up his results with regard to formaldehyde thus: "Formaldehyde has, therefore, penetration powers probably greater than those of most other gaseous disinfectants. The bacillus tuberculosis was killed whether in dry or moist state, even when placed in deep narrow recesses, or embedded in a thick layer of sputum." It is generally admitted that formaldehyde is the best gaseous disinfectant we possess. Objections to its use are, firstly, the cost; secondly, the irritating action of the vapour on the eyes and nose of those engaged in reopening the room after disinfection.

Turning now to the wet methods of disinfection, the first to be considered is chlorinated lime; this should be used as a 10 per cent. solution, and applied directly to the walls, etc. Delépine considers that this is the best method of disinfecting the dwellings of the poor. The procedure adopted in Manchester in using this method is as follows: A solution of chlorinated lime, of the strength of 1½ ounces to the gallon, is used. The wall-paper is thoroughly saturated with this solution, applied with a soft brush, and is then stripped from the walls. The bare walls, the ceiling and floor, are washed over several times with the solution, and any articles of furniture which will admit of such treatment are similarly washed over. The results obtained by this method are thoroughly satisfactory, but the process is one involving much expenditure of time and trouble.

Formalin spray is a very commonly used wet method of disinfection. A 40 per cent. solution is taken, and of this 4 ounces to the gallon of water are used. Several forms of spraying apparatus are on the market, two of the best being the "Formalide" and the "Invicta." The points to be aimed at in a good spray are fineness of division and suitable velocity.

Rideal and Slater[2] observe that their results would place formaldehyde amongst the first three or four antiseptics in Koch's tables. The solutions are without any ill-effect on clothes, etc. This is one of the best, most certain, and most cleanly methods of disinfection, and is a most excellent way of dealing with tuberculously infected rooms.

[1] Delépine, S.: *Journal of State Medicine*, 1898.
[2] Rideal and Slater: *Lancet*, April 21, 1894.

The only other wet method of disinfection which need be considered is that known as "Esmarch's method." It should only be used in houses that are in a clean condition, apart from the specific infection. The wall-paper is well rubbed with breadcrumbs; floors, painted walls, and brickwork, are washed with soap and water, and ceilings limewashed. Bedding, etc., is removed and disinfected by steam. The method requires care, and takes a considerable time.

I have endeavoured here merely to give shortly the essential facts connected with six of the most commonly used methods of disinfection of houses. In addition to this, however, it is essential that all bedding, clothing, etc., be removed and thoroughly disinfected by steam. In cases of tubercle infection, one may say that formaldehyde vapour, formalin spray, or washing with a solution of chlorinated lime, are equally efficacious. In only a few places is sulphur fumigation used for tuberculously infected houses, and it should be discountenanced, as also should be the use of chlorine vapour. The thorough disinfection of houses is one of the most important parts of our whole scheme against tuberculosis, and one which should receive much care and attention from all sanitary authorities.

TUBERCULOSIS IN CHILDREN.

By ESTHER CARLING,

M.D.,

Medical Superintendent of the Kindercot Open-Air School, Kingwood, Oxon.

The feature of the tuberculosis campaign which most appeals to both the profession and the laity is undoubtedly the suggestion that much effort should be spent on dealing with tuberculous and tuberculously disposed children. By so doing it is plausibly argued that if the ground is cleared in early life, an unmanageable crop of noxious weeds will not appear in the time of full fruition. Now, this sounds very well, and I fully believe it is as important as it sounds; but there is one point which needs a good deal of attention, and that is the actual recognition of this particular weed that we wish to eliminate before it becomes the mature thing we know so well.

The Nature of Tuberculosis in Early Life.

What is tuberculosis in children, and what is not? I am sure the profession would do well to pause and consider the pros and cons of this question before it embarks on giving expert advice to county and borough councils as to the spending of large sums of public money.

After four years' experience as medical superintendent of a children's sanatorium, I find myself in much greater doubt about the recognition of tuberculosis in childhood than I was at the beginning, and the extraordinary variation of statistics on this subject "gives one furiously to think." On the one hand we have experts who find, as Naegeli does, that 98 per cent. of children dying from all diseases in Vienna are tuberculous; on the other hand, we have school medical officers who report that barely 1 per cent. of the children under their care show any evidence of tuberculosis. How such variation of opinion works out practically the following incident may show: In a certain country school a case of definite tuberculosis occurred, and the squire, who took a keen interest in the health of his village, bethought him to have all the other scholars examined by the newly appointed tuberculosis officer. The result was appallingly Viennese—67 out of the 120 children were pronounced to be tuberculous, and great was the distress to think that this hitherto model village should have been found to be a veritable plague spot; negotiations were at once opened for the establishment of a sanatorium. Meanwhile someone suggested that a second opinion might be desirable, and the squire gladly arranged with another expert to examine the school, not mentioning the previous experience. When the second report came in on the same 120 children, the 67 tuberculous had dwindled to 3! The village breathed again, the architect and builder of the suggested sanatorium mourned over their lost job, but did the incident make for the establishment of confidence in the medical profession?

There is at the present time no consensus of opinion as to what constitutes pulmonary tuberculosis in children. A large proportion of the children sent to a sanatorium school have very indefinite physical signs; they breathe badly and unevenly, they look delicate, they have or have had a cough, perhaps they come of tuberculous stock, or they may have some scattered râles, or that abnormality of breath sounds so expressively called by the late Dr. Huggard "crumpling." One or two of these items, and the certain conviction that a stay at the sanatorium will "do the child good," is sufficient with many to found a diagnosis upon and sign up a certificate. Undoubtedly if it is a question of sending to an open-air school, then "when in doubt play trumps," for such cases are absolutely suitable for treatment, even if they are potentially, rather than actually, tuberculous. They are the seed of a future crop of tuberculosis, but they present certain difficulties. (1) How long should they be kept in the sanatorium school? (2) Can one be said to "cure" what never definitely existed? If not cured, are the children to be dogged through life by the label "consumptive." If not labelled "consumptive," are they to slip through the meshes of the public health service and lose the watchful care that may be a

blessing or a curse, according to the way it is administered? Although it is not so serious an error to wrongly call a child phthisical as it is to so label an adult, it still is a great pity we cannot determine with greater exactitude the condition that requires notification. For be it remembered notification means exclusion from school, and until the country is scattered over with the "special" schools that are slowly springing up, this exclusion means a very serious loss to the child, not only mentally, but often physically as well. It means for the already devitalized child that most pernicious existence known as "running wild." Now, if "running wild" is undesirable for a healthy child, it is a hundredfold more undesirable for the tuberculous. The central idea of the sanatorium system, to which we have now given legislative allegiance, is the ordered, regulated life of graded exercise and rest. Discipline is the very essence of the treatment; yet this invaluable factor we cut off from the child when we exclude it from school and let it "run wild" in the streets or get in the way in its mother's kitchen. And mentally we inflict a loss for which we ought to have some consideration, for again and again children come to the sanatorium cruelly backward and deficient in the make-up of the average person, because they have been excluded from school by over-zealous medical inspectors. I have two instances in mind of a boy of twelve and a girl of eleven, who had no idea of reading or writing, yet they were in no sense "ill," though supposed to be consumptive. Of course, where open-air schools exist, all doubtful cases should be sent to them; but where there is no such provision, much thought should be given to a diagnosis which may mean so much disadvantage to a child's after-life.

Points in Diagnosis and Management.

With regard to diagnosis, exact and scientific tests seem as yet uncertain; the test by tuberculin will be usually held too risky for anything like general administration, even if its conclusive value were absolutely established. Complement-fixation tests are still in the province of laboratory experts alone; while the simple things, such as Von Pirquet's cutaneous reaction, are unreliable. The ordinary sputum test is so rarely available in children as to be negligible as a help. We are left, then, with our clinical senses alone, and our interpretation of the social and hereditary factors acting on the case. It is truly a very difficult task for school medical officers, as things are at present, to decide what to do about the "suspects," and it is difficult for sanatorium officers to decide how long they should keep the indefinite cases under their care.

Probably because of this very indefiniteness, the after-results of sanatorium work with children seem less good than with adults. They respond more quickly while at the sanatorium, they lose ground more

quickly on return home. Is this an argument for giving children longer or shorter terms of treatment than adults? Practically it works out that one is always fighting to keep the children on, and we have some children now under our care who were with us four years ago, not because they are ill, but because their acquired health is too precious to yield up to the slums again. But this necessarily means keeping others out whom a short stay might put on their feet again, at any rate temporarily. The ideal to aim at is, of course, a term of residence (say, six months) at a sanatorium school, followed by attendance at an open-air school as a day-scholar.

It is obvious that in speaking of sanatorium treatment for children one is speaking of the residential open-air school, and not of a purely medical institution. One is apt at times to be very impatient of the delay and circumlocution that comes about from the necessity of getting the consent of the Local Government Board or Board of Education to a suggested scheme; but when one finds a borough council suggesting that a children's sanatorium should be erected on a wild tract of downland and should be controlled by a caretaker and his wife with no resident medical officer and no teacher, one may be thankful there is a Government department behind to stop public money being so wasted. The Board of Education is stimulating local efforts by its special medical grants, and it therefore has much to say to county or borough council schemes. The suggested policy seems to be that a large residential open-air school should be provided for a group of counties or administrative areas, but the difficulty is to get such areas to combine for the purpose. The counties of Berkshire and Buckinghamshire have combined to purchase a sanatorium, and have appointed a joint committee to manage it and to erect a school for sixty children. A certain amount of opposition to this scheme has been raised on the ground that children should be treated entirely apart from adults. It is very difficult to understand this objection; of course they should be in separate buildings with their own grounds and playing-fields, and with a separate life in every particular, but the medical and administrative control can be more economical and efficient by combining all cases in the life of a colony. It must be more convenient for a county authority to concentrate its tuberculosis work where possible. So much of it must be scattered necessarily, that where an administrative centre such as the sanatorium is possible, it seems wiser to keep together adults and children in a colony and secure a better-paid staff and better equipment than would be possible with small scattered institutions. There is so much talk nowadays of cheap buildings for sanatoriums that there is some risk of making an idol of cheapness. The need of efficient medical treatment should be remembered, too. It should not be considered satisfactory to erect a sanatorium to house

twenty acute cases of phthisis that has no spot of room in which sputum can be examined, and only provides a room hardly bigger than a cupboard to act as doctor's office, matron's sitting-room, and dispensary. Yet such a sanatorium has been opened by a county council in the present year. Under a more comprehensive scheme it should be possible to get such things as an X-ray installation and laboratory equipment, and yet keep the expenses within the normal limit. From the point of view of efficient staff there is also much in favour of the colony ideal. In dealing with children, for instance, certain things that might be considered impossible luxuries in a small place could be worked in on the numbers if the colony were large enough. Such "extras" are the treatment of physical malformations by a trained expert in Swedish remedial exercises, and the care of teeth and eyes. On the educational side, too, a much more liberal curriculum can be provided if there are sufficient numbers to allow for a band of teachers rather than only one, and these teachers can greatly help the life of the place by giving classes in their special subjects to the adults of the community (of course, with extra payment). The one thing that must never be sacrificed to numbers is individual knowledge of each patient, whether child or adult; this is absolutely essential and pre-eminent as a principle, but it can be obtained even in a fairly large community if the colony ideal is kept in mind. Efficient people should be secured to look after their own unit, and scope should be given them for the exercise of their own individuality.

The Planning and Construction of Sanatoria Schools.

The construction of a children's sanatorium has certain special features as regards classification. The familiar type of building that provides two wings and a central part for administration is not a suitable plan for children. There are at least five classes to cater for, and this should be thought of in the construction of the building. First and second are the ordinary run of biggish boys and biggish girls; then there are, thirdly, the little children, who want special play-places and sleeping-places; fourthly, there are the really ill children, who want to be housed fairly near the kitchen for convenience of carrying meals, etc., but apart from the full sight and full noise of the more robust; fifthly, there may be infectious children, and some sort of isolation or observation block should be provided to this end. The school buildings and provision for teachers should be on a generous scale. It must be remembered that in many places there is no social life outside the sanatorium for members of the staff, and if efficient people are to be attracted and kept, it is essential to go to considerable lengths to treat them well. This, of course, applies to nurses and servants also, and it rests with the medical staff to promote

the community feeling on which the ultimate vitality of the work depends.

The present position of the sanatorium in relation to children is still to a great extent indeterminate, for as yet very few exist, though schemes are everywhere in formation. The central idea of a children's sanatorium should be the combination of education with medical treatment. As no adult sanatorium can be considered efficient that does not make provision for an organized scheme of graduated work, so no children's sanatorium is complete without full educational arrangements. Just as graduated work helps the actual treatment of adults as well as the morale of the institution, so school discipline and occupation helps actual treatment with children. Education must, however, be subservient to the medical régime, and though the teachers will work collaterally with the nurses, they must recognize that their work will often be interfered with by medical needs, and they must understand that such interruptions are part of the special nature of the school. It is greatly to be hoped that the Board of Education grants will be so adjusted that they are not dependent on actual "attendances" at school, but on "residence" if it is a sanatorium school. If this is not done, the more definitely tuberculous and ill the child is, the less desirable is it as a member of the sanatorium, because it does not earn good grants—a very undesirable state of things. From the legislative and economic point of view, arrest of disease in lives half spent can never be so fruitful of result as arrest at the beginning. The part the sanatorium can play to this end is but one item in the sequence of care that must be given to the tuberculous or possibly tuberculous child. But it is the part that shows most and that costs most, and will be subjected, therefore, to the searchlight of criticism more than the less ostentatious but equally valuable work done in the homes and dispensaries. Beyond its value to the immediate children concerned is the object-lesson provided to parents, visitors, and to the special staff trained within its scope. This broader aspect should be remembered, as the value of the sanatorium thus spreads through a circle much wider than that of the actually sick, and is therefore of farther reaching importance.

NURSING ORGANIZATION AND ADMINISTRATION FOR TUBERCULOUS PATIENTS IN COUNTRY DISTRICTS.

By A. W. FORTESCUE SAYRES,
M.D. (BRUX.), M.R.C.S., L.R.C.P., D.P.H. (LONDON),
Tuberculosis Officer, Devon County.

The supervision by nurses of tuberculous patients in rural districts is a complicated matter, and one extremely difficult to organize successfully. Nevertheless, it is an important factor in the crusade for the arrest and prevention of tuberculosis, as only by the constant visiting and inspection of these patients (who for the most part belong to the illiterate, careless, and irresponsible class), can we hope that their infective sputum will be regularly dealt with according to instructions, and that the patients themselves will obey and carry out hygienic rules.

The Organization of Nursing for Tuberculous Subjects.

Some counties appear to be working a nursing system with whole-time nurses, but it is difficult to understand how more than a primary visit can be managed with such large distances to be covered. A weekly visit, or even a monthly visit, would entail so large a staff that the expense would be nearly prohibitive, and visiting out-of-the-way country cottages would present many difficulties. The object of a satisfactory nursing system is to provide the *frequent* visit of a nurse (at least once weekly) to supervise the efficient disinfection and disposal of sputum, to see that the patient is carrying out regulations and instructions relative to living an hygienic life, and, if a shelter has been granted, that it is being used properly. This frequent visiting can be provided by making use of the County Nursing Associations. In most counties nearly all rural areas are now served by district nurses, three or four villages combining to support a nurse. This is the case in Devon.

Dr. Adkins, the Devon County Medical Officer, has made an arrangement with the County Nursing Association and other unaffiliated associations by which, on application of the Tuberculosis Officer, a nurse visits a tuberculous case once weekly at 1s. per visit, and administers the nourishment benefit, if such has been granted. The Insurance Committee will, on representation of the Tuberculosis Officer, allow special nursing at the rate of 6d. per visit for insured patients, the fees not to exceed 5s. per week. The weekly visit is the essential point. Daily visits are not often necessary, only to those bedridden patients

who have arrived at the last stage of the disease. The expense, therefore, is not great. The grants in aid of nursing, recently promised by the Chancellor of the Exchequer in his Budget, may probably in the future assist greatly the provision of nursing in rural districts.

Uniformity of Action by Nurses.

There is difficulty in obtaining uniformity of action amongst so many differently trained nurses, and of being assured that they will enforce rules according to the wishes of the Tuberculosis Officer. Patients and people generally have become confused, and in consequence indifferent, by the many and various orders they receive. How is this to be obviated? The following are important points: (1) Enlist the co-operation of the County Superintendent (supervising matron) of the County Nursing Association. This lady is continually travelling, inspecting, and supervising the work of the district nurses. She is able to instruct and obtain compliance to rules which have been agreed upon as essential. (2) Obtain the assistance of the training centres for district nurses. The matrons are usually most ready to assist by instructing the students in rules for tuberculous patients. (3) Personally visit and interview the unaffiliated nurses, pointing out rules you wish adhered to.

Over the county area of South-West Devon, for which one Tuberculosis Officer is responsible, there are thirty-four villages served by district nurses. Of these villages, twenty-five (73 per cent.) are served by County Nursing Association nurses, and are, therefore, under the control of the County Superintendent. Of the remaining nine, two have large nursing institutes under a matron acting in co-operation with the Tuberculosis Officer, seven only are worked by unaffiliated associations. It is, therefore, fairly easy to obtain the necessary uniformity, the chief point being to obtain the co-operation of the County Superintendent.

Rules for Tuberculous Patients.

The supervision of the efficient disinfection and disposal of sputum is one of the most important duties of the nurse. These domiciliary cases, who are generally in a chronic or advanced stage of disease, and who are expectorating billions of tubercle bacilli per diem, up to the present have been the greatest culprits in spreading infection, and are the most necessary to get under control. Until we have more satisfactory control over these patients, we shall continue to have the contact cases which, unfortunately, are so frequent.

It is not necessary to detail all the rules a nurse should see carried out by tuberculous patients; these are well known, but the following seem worthy of more notice than has hitherto been bestowed upon them:

(1) The prohibition of spitting directly into the fire, upon rags or

paper, or into a spittoon. (2) Spitting only to be allowed into a cup or sputum-flask containing strong disinfectant, and supplied with a lid, when indoors, and into a pocket-flask containing the same solution when out of doors. (3) The disinfectant used to be of a higher coefficient than carbolic. (4) The solution to be of sufficient strength to have a rapid lethal effect upon tubercle bacillus. The solution, when first prepared, should be at least of strength of 1 in 50, in order to insure that it shall not be below 1 in 100 if an equal amount of sputum be added. To prepare the solution, a teaspoonful added to half a tumblerful of water roughly gives a strength of 1 in 50. In the homes of the illiterate, the nurse at her weekly visit should prepare sufficient solution to last the week. (5) The sputum to be well mixed with the disinfectant solution. (6) The disinfected sputum to be disposed of morning and evening in a place specified in instructions. (7) In country districts the method of disposal to be by burning if the contents are of not too large a quantity. If burning is impracticable, the disinfected sputum should be buried deep in the mould of the garden.

THE AIMS AND METHODS OF THE TUBERCULOSIS NURSE.

By Miss MARY RUNDLE,
Matron of the Royal Hospital for Diseases of the Chest, City Road, London.

The tuberculosis nurse has now become a recognized and necessary officer in the tuberculosis campaign. The duties of the tuberculosis nurse, more than in any other branch of her profession, require her to teach the principles and practices on which depend the prevention of disease. Thus her position is exceptional, for although the actual nursing may be limited, it is most essential she shall possess the knowledge which will enable her to cope with the emergencies which repeatedly occur. This point should be emphasized, as there is a tendency to think, that for some appointments, notably those of the Tuberculosis Dispensary, other than trained nurses should be entrusted with the work. This suggestion should be deprecated. If the sick and diseased are to be helped towards health, who but a trained nurse can be expected to view in the right proportion the condition of ill-health. And as the fundamental law of successful teaching is to proceed from the known to the related unknown, the untrained woman lacking that fundamental knowledge cannot be expected to become a successful teacher, and for the same reason it is necessary that a nurse acquaint

herself with some knowledge of hygiene and sanitation. It would be difficult to say in which environment the nurse has most scope —in the institution, the home, school, or Tuberculosis Dispensary. We are hoping great things of the Tuberculosis Dispensaries, the "sorting centres." Here the nurse's work and influence are not restricted to the patient, but come into touch with the family and home for a definite purpose, and that not always an acceptable one. We are so accustomed to use the word "tact" when referring to her in this direction, a *most* necessary qualification, but I would emphasize also the value of a broad, liberal education. I do not mean professionally only, but a knowledge and understanding of the world and people. The nurse's duty in the home will be to encourage healthy hygienic habits, to see that the doctor's ordered treatment is carried out, to encourage other members of the family "contacts" and "suspects" to be examined by the doctor, to make provision for proper sleeping accommodation, feeding, and clothing. To send this member of the family to the seaside, another to a sanatorium, and if she *can*, to persuade another—the original and continued source of infection, perhaps—to enter an infirmary or equivalent institution. And then there are the family finances to settle on a sound basis. Her responsibilities are many, but she has resources, and she will acquaint herself with all the existing charitable organizations, and there are many, and know how to enlist their co-operation in her mission. The organized care or case committees now formed in connection with Tuberculosis Dispensaries must prove invaluable in assisting in this direction, when the members are composed of representatives of philanthropic organization, in preventing as they do overlapping and consequent waste of time and material; also ensuring less annoyance to the patient and his family, a consideration not infrequently overlooked. The nurse's duties in the dispensary itself will be to write up reports of the home visited, to assist the doctor in weighing and examining the patients and contacts, to keep records of all the work done, visits paid, etc. To facilitate this task it is most desirable a concise and uniform system should be adopted. In the institution—it may be a chest hospital, sanatorium, or infirmary—the nurse's duties are entirely different, but can we say requiring another fundamental training? Those in authority in these institutions would tell us of the difficulty experienced in securing the right material, and we should hear also different opinions expressed as to the most effectual training for this branch of the campaign. There may be little actual nursing except in the infirmary cases, but much teaching in hygienic principles of living, and this to undisciplined adults, who are kicking against their restricted inactive life. It is essential their minds shall be at ease, and healthy, as it is that their bodies shall be repaired. What an opportunity for

the nurse, and how little she may be equipped for the task, and it is in this connection, I think, that the chief difficulties present themselves in securing the right material, and from them have arisen the different opinions as to the best training for a tuberculosis nurse. It has been often said, it is not always the highly-skilled and general-trained woman that makes the best tuberculosis nurse. What is the reason? It may be that to some accustomed to the rush and ever-changing scenes of a big general hospital, the life at a sanatorium away in the country may present a very quiet and perhaps uninteresting existence. May not that point of view depend rather on temperament and not so much on the amount of training a nurse has had? It is obvious that what is wanted is a woman who understands human nature, but can we afford to sacrifice knowledge when at any moment the lack of it may mean disaster to the patient? To enumerate the predisposing causes and complications attending tuberculosis, such as affections of the digestive tract, the respiratory system, joint infections, and the nervous element, will make us realize that it is in a general hospital that the nurse will have become acquainted and familiar with all these conditions.

The district nurse, I suppose, is the most independent. She bears the responsibility alone of nursing and caring for the patient and the family simultaneously. She must feel responsibility heavy upon her. In her endeavours to stem the tide of disease in the community her difficulties are peculiarly her own, for she endeavours to alleviate suffering, and witnesses disease under the most distressing conditions and in surroundings not calculated to assist, but to retard, recovery. Opportunities offer themselves, consequent on her professional knowledge, of detecting suspects beyond those of other social workers, and the authority she has for dealing with them is limited, and varying in different localities. A course of action should be very guardedly set, the consequences are so vital; professional etiquette must not be infringed. The nurse will wish to persuade the "suspect" to present himself for medical examination. To whom shall she direct him, and what authority has she to support her? In what relation does she stand to the Medical Officer of Health? The majority of nurses will find a way, but should there not be a recognized authority to protect the nurse from seeming officiousness?

With regard to open-air schools, the question whether the teacher should also hold a nurse's certificate is a debatable one. She certainly is dealing with diseased children, and the wish to prevent dual responsibility is a reasonable one; but surely, if we are to insist on this, the teacher will have to begin to qualify in her cradle. The better plan would seem to be the appointment of a school-nurse.

Having enumerated some of the parts the nurse plays in her mission

of health, it would be well to consider a training best calculated to equip her. We cannot aim too high. The nurse, first, should be a woman of a broad, liberal education. She should have the foundation of a general training, and then a period of specialization at a chest hospital or sanatorium, where special efforts should be made to instruct the nurse, and lectures given on a broad basis, covering as far as possible the demands previously alluded to. An important place must be given to hygiene and sanitation. A sufficiently exhaustive course of lectures on these subjects may be difficult to procure in a hospital; in that case some form of affiliation with a sanitation and hygiene institution should be arranged. At the Royal Hospital for Diseases of the Chest we give our nurses facilities for obtaining the certificate of the Royal Sanitary Institute. This, with an opportunity also of working in the Tuberculosis Dispensary attached to the hospital,is a valuable addition to the experience obtained in the wards. It is regrettable that a training such as suggested must of necessity cover many years. This is unavoidable until such time as our profession is organized; it should then be possible to work on an amalgamation system, so that a nurse could, after spending a given time in a general hospital, specialize in any other, her certificate covering the whole period. But to make this practicable we must have a uniform recognized standard for all training schools, under the control of a legalized governing body. The question of suitability of temperament for a particular branch of work, whether tuberculosis, fever, or any other, would be dealt with, probably, before the nurse specialized. There is no argument for a limited training on the score that some nurses are better suited psychologically for this or that specialization. No training will detract from suitable temperament, but enrich it a hundredfold. When we speak of a suitable temperament for the nursing of tuberculosis patients in sanatoria, what is uppermost in our minds is the capacity for managing them. In those patients who are not very ill, and yet have to be under the restraint of discipline for their health's good, the effect of mind over body plays a most important part. How essential, then, that the nurse shall understand the mind! Can we help her? It is quite possible we could by including in our curriculums a short comprehensive course of this study of the human mind. Psychology as a science we could not pretend to teach, but would it not be possible to gather some gleanings sufficient to lead the nurse into understanding the thoughts and feelings that make personalities and character? But in all our endeavours to fit nurses for this important campaign we shall ever be handicapped if unable to attract the best type of womanhood to enter the ranks of our profession.

It may appear to many the course of training suggested is too idealistic, but the subject cannot be left without the necessity for an

adequate education being enforced, in justice to our profession, which has to compete with so many now open to women offering greater educational and financial advantages; also in justice to the public, which has every right to the best nursing skill available.

GENIUS AND TUBERCULOSIS.

By ARTHUR C. JACOBSON,
M.D.

In a paper written some six years since I discussed the influence of the toxins of tuberculosis upon temperament and genius, citing examples.[1] Dr. John Bessner Huber, in his well-known work, has dealt with the same subject.[2] He has shown the influence which tuberculosis has exerted upon literature and the arts, as indicated specially by Robert Louis Stevenson, Chopin, Keats, and Marie Bashkirtseff.

The spurring influence of the *spes phthisica* and related psychological phenomena upon the creative mind has, of course, often been noted. Regarding Schiller, Nevinson wrote that "it is possible that the disease served in some way to increase his eager activity, and fan his intellect into keener flame." Certain phrases of Keats would seem to show that he apprehended the same influence, and Lanier gave himself up quite understandingly to the intoxication. Stevenson is probably the most familiar example of the genius whose powers are quickened by reason of the general psychic excitation resulting from the action of tuberculous by-products. The natural optimism of such a mind is intensified by the characteristic effect of the toxins, until (strange paradox) evil is seen to incite good—pathology to warm and colour delightful qualities of temperament. We see a very similar instance in Emerson, likewise an intense optimist. Other notable examples of genius or of high talent as influenced by tuberculosis, studies of all of whom appear in the author's earlier paper, have been John Milton, John Locke, Alexander Pope, Percy Bysshe Shelley, Tom Hood, Laurence Sterne, Thomas De Quincey, Elizabeth Barrett Browning, Molière, Henry Thoreau, Goethe, Balzac, Jane Austen, Samuel Butler, Edward Gibbon, Voltaire, Francis Beaumont, Walter Scott, Dr. Johnson, Baruch Spinoza, Georges de Guérin, David Gray, Amiel, Washington Irving, John R. Green, Richard Baxter, Charlotte Brontë and her almost equally distinguished sisters Emily and Ann, Rousseau, John Ruskin, Charles Kingsley, Robert Southey, Nathaniel Hawthorne,

[1] *Medical Library and Historical Journal*, December, 1907, and *Æsculapian*, December, 1908.
[2] Huber, J. B.: "Consumption and Civilization." New York, 1906.

Toru Dutt, Robert Pollok, Hannah More, Pierre Jean de Béranger, William Ellery Channing, Immanuel Kant, "Thomas Ingoldsby" (Richard Harris Barham), and James Ryder Randall. In addition to these may be mentioned Mozart, Descartes, Mérimée, Richelieu, Raphael, Bastien-Lepage, Jacquemart, Trutat, Watteau, Paganini, von Weber, Nevin, Purcell, Rachel, Laënnec, Bichat, Cardinal Manning, Rush, Trudeau, Godman, William Pepper (second), Calvin, Cicero, Cecil Rhodes, and St. Francis of Assisi. Of the great surgeon Dupuytren, Dr. James J. Walsh has written a sympathetic study in which are described his feverish activities.

It would be as great an error to advance an argument seeking to prove that any genius was a genius because he was tuberculous as to reason that any genius was a genius because he was "crazy." It is perfectly evident that many representing the very highest types of genius have owed nothing to the *spes phthisica*—that is, were not tuberculous. Indeed, we may say that while the genius is exceptionally prone to disease, he is not, as a rule, attacked by tuberculosis. On account of his peculiar nervous organization he is more likely to be claimed by insanity or some allied disability, which may destroy his productivity or colour his creations, as it did those of Tasso, Cowper, Guy de Maupassant, Byron, and Poe.

The difference between insanity and tuberculosis, in their effects upon genius, is that the one is antithetic to the faculties that actuate the creative mind, while the other is synergetic. Neither accounts for the fundamental quality of mind which characterizes genius and which is *sui generis*. Upon the already set psychological switchboard each merely exerts its good or bad effects, as the case may be, like the many other factors which influence human life and thought.

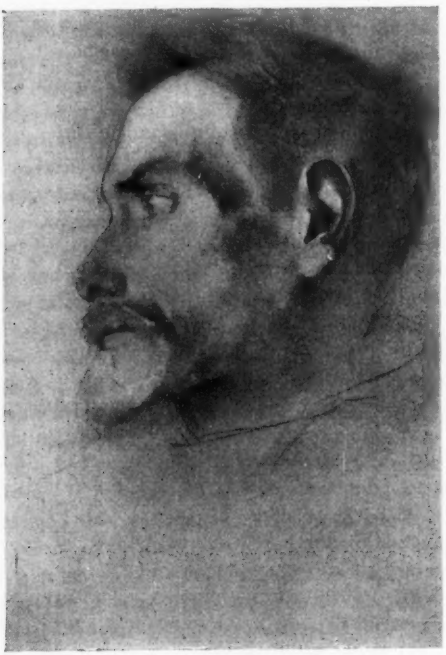
In the life of Francis Thompson we have an example which typifies the tuberculous genius of the highest order. Like Keats, he was a student of medicine. He studied medicine for six years at Owens College, Manchester, but failed three times in examinations for the degree. His father, who was a physician practising at Preston and Ashton-under-Lyne, had first tried to make him a priest (both his parents were converts to the Roman Catholic Church), and until he was seventeen, when he took up medicine, he was in training at Ushaw College. After his failures his father appears to have cast him off utterly, whereupon he helplessly attempted to earn a living in the humblest ways, finally going to London in November, 1885, being then about twenty-six years of age. He worked at first as a publisher's collector, afterward selling matches, newspapers, and pencils. He also ran errands, held horses, and worked in a bootmaker's shop, sleeping at night on the waste ground near Covent Garden, where the refuse of the great market was thrown. Thus destitute and ill, he became a

victim of laudanum, which, as with De Quincey, appears to have enabled him to cope with his neuralgia and tuberculosis. Five years of terrible privation and sickness reduced him to beggary. During these years of outcast life he wrote two poems on ragged scraps of paper, "The Passion of Mary" and "Dream Tryst," and a prose essay, "Paganism Old and New." These he sent to an editor, Mr. Wilfrid Meynell. Believing that they were not accepted, he attempted suicide by taking laudanum, but was saved by Mr. Meynell, who had traced him to the refuse-heap, his interest excited by the remarkable character of the contributions. He was induced to enter a hospital, and afterward sent to Storrington, Sussex, to recruit. He then wrote the "Ode to the Setting Sun," other verse, and the "Essay on Shelley." His genius was promptly recognized by Browning and Coventry Patmore. In 1893 he published his first volume of "Poems," written chiefly at Storrington, of which the best known is the "Hound of Heaven," marked by marvellous spiritual insight, metrical beauty, and incomparable imagery. In 1895 "Sister Songs" were published, dedicated to the children of Wilfrid and Alice Meynell, his friends and protectors. They describe the days of his outcast experience. From 1893 to 1897 he lived mostly near the Franciscan monastery in Pantasaph, North Wales, cared for by the monks. In 1897 he published the "New Poems," written for the most part in Wales. Of these, the "Mistress of Vision" and the "Anthem of Earth" rank high. Of his prose work, the "Essay on Shelley" abounds in striking thought and verbal beauties. A devout Catholic, of ascetic temper and mystical prepossessions, he may be called the Laureate of his Church, though the world claims him as one of its immortals. He entered the Hospital of St. Elizabeth and St. John, in St. John's Wood, in the summer of 1907, and died there on November 13 of the same year.[1] He was buried in the Catholic cemetery at Kensal Green. His tomb is inscribed with his own words: "Look for me in the nurseries of heaven."

That last phrase furnishes one of the keys to a proper understanding of Francis Thompson's character. This "most august and pontifical of poets," towering over all the "filigree poets and measurers of syllables" of his age, retained to the end the child-spirit. It is said that the great artist never outgrows his childhood; his intuition, piercing through things, is the intuition of the child. Much is lost to grown-up vision. Thompson views the world with the grave and solemn wonder of the child. Being a child, with no responsibilities, no doctrines, and "no heavy sense of an apostolic mission," he sings naturally and unconsciously, like the skylark. His poetry takes a religious turn

[1] We are indebted to the courtesy of the Editor and Publisher of the *Interstate Medical Journal*, St. Louis, U.S.A., for the loan of the block for the preparation of the accompanying remarkable portrait illustration.—EDITOR, B.J.T.

because he hears Nature speak in the language of religion, in which are cast all his own thoughts. He is not, as has been charged, the poet of a little clique of co-religionists, but second in equipment and power to Shakespeare, according to the judgment of Arnold Bennett and many other competent critics not of the Catholic faith. Thompson was not a drunkard, or in any way depraved. Naturally, the circum-



Francis Thompson

From a drawing by the Hon. Neville Lytton
October 1907

stances of his life gave rise to suspicions, and these derived apparent support because of a remorseful note in some of his verses. His use of laudanum came about in a manner denoting no moral turpitude whatsoever. His very innocence and saintliness accounted for many of his difficulties ; only purity and sincerity inspired his pen.

Thompson's life on the streets of London was the life of a perplexed child, thoroughly bewildered by the confusion and conflict of city life,

and unable to meet its distresses and discomforts in any way commensurate with his tremendous powers. Yet before he died this glorious bootblack and beloved vagabond of song was in great demand as a critic and essayist by the great English literary journals. The world should never give up its atypical boys, says Bliss Perry, speaking of the late maturity of Rousseau. Mendel himself was never able to pass examinations. The world ought never to give up the Thompsons, for all their incapacities. Out of their very failures have come successful careers, and over physical degradation have they won victories and towered in intellectual glory. This is something that ought to be remembered by those who are so dogmatic in classifying our so-called defectives. They would not recognize a potential Thompson or a Verlaine, much less distinguish the types.

As was the case with Keats, Shelley, Lanier, Schiller, and many of the other creative minds discussed by the author in his earlier essay, the time of our "God-smitten" poet's greatest productiveness coincided with the most active period of his disease. Like De Quincey, Thompson was succoured in London by a girl of the streets.

It would be well if students of tuberculosis and genius gave greater heed to the remarkable association to which I have endeavoured to draw attention.

INSTITUTIONS FOR THE TUBERCULOUS.

OPEN-AIR TREATMENT AT NOTTINGHAM.

Dr. Philip Boobbyer, Medical Officer of Health for Nottingham, has kindly sent us photographs and particulars of certain interesting experiments which have been carried out under his direction, and which admirably illustrate how open-air treatment can be provided at a minimum of outlay and with a maximum of benefit. The adapted

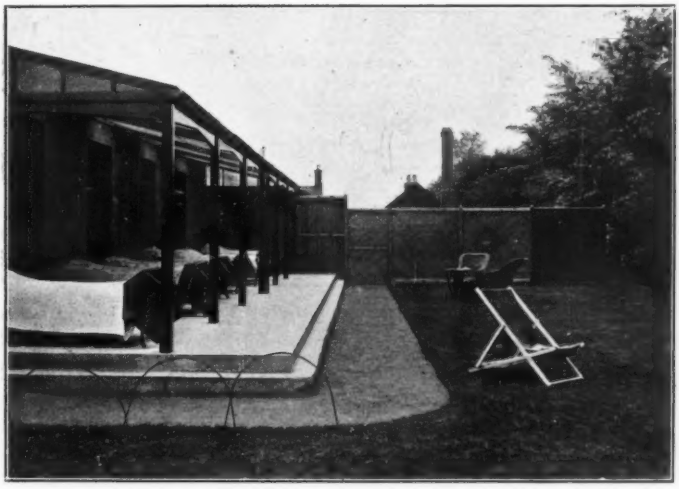
CITY OF NOTTINGHAM: INEXPENSIVE OPEN-AIR ISOLATION HOSPITALS AND SANATORIA.

(Adapted farm buildings.)

buildings shown in the accompanying photographs were originally the cowsheds, dairy premises, and barns of the old Glebe Farmstead, of Basford, the land of which was purchased in 1885 by the Nottingham Corporation as a site for a new Isolation Hospital. Dr. Boobbyer reports as follows: "In the same year, some four years before the building of the existing isolation hospital was commenced, these farm buildings were first used for isolating smallpox cases, the surface- and sub-soil within and around them having been dug out and the space

CITY OF NOTTINGHAM: INEXPENSIVE OPEN-AIR ISOLATION HOSPITALS AND SANATORIA.

(Adapted farm buildings.)

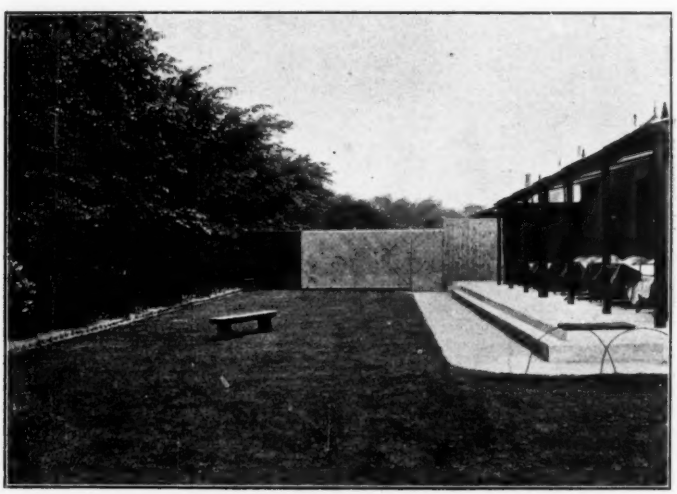


CITY OF NOTTINGHAM: INEXPENSIVE OPEN-AIR ISOLATION HOSPITALS AND SANATORIA.

(Corrugated-iron sheds with verandas, adjoining adapted farm buildings.)

CITY OF NOTTINGHAM: INEXPENSIVE OPEN-AIR ISOLATION HOSPITALS AND SANATORIA.

(Adapted farm buildings.)



CITY OF NOTTINGHAM: INEXPENSIVE OPEN-AIR ISOLATION HOSPITALS AND SANATORIA.

(Corrugated-iron sheds with verandas, adjoining adapted farm buildings.)

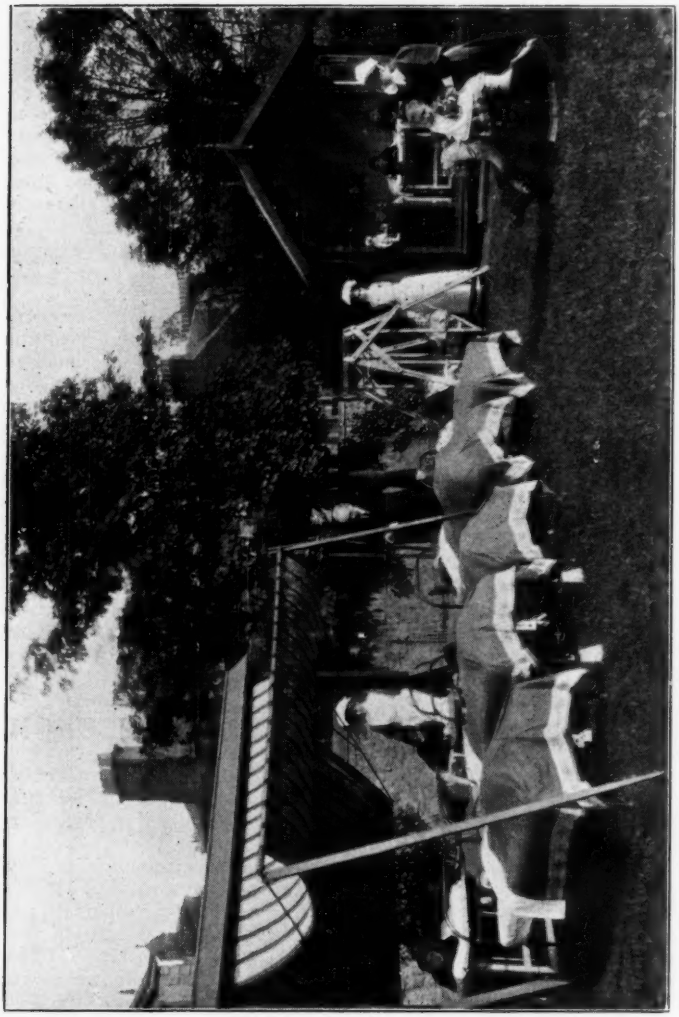
thus left subsequently filled in with fresh material. When this particular smallpox outbreak had ceased, these buildings were used from time to time for the accommodation of cases of infectious sickness of various kinds requiring special isolation, but not admissible to the general wards of the isolation hospital. About the year 1895 the present writer began to nurse cases of acute specific disease regularly in the open air, whenever he could secure the consent of patients and friends to make the experiment, and it was found that the adapted buildings lent themselves with special facility to this purpose. Windows were converted into doorways, and window-sashes were made to hinge back bodily against the adjoining walls, all this with the object of increasing ventilation and accustoming the inmates to open-air conditions. Ultimately, the verandas were added, and since their construction patients suffering from various febrile diseases and septic conditions have been nursed at all seasons of the year in the fresh air, with no further protection against the latter than that afforded by the bedclothes and the roofs of the verandas, supplemented in very bad weather by canvas screens laced to the veranda pillars. All types of cases speedily established a complete tolerance of the open-air conditions, without untoward results in any way attributable to the exposure in any single instance. About ten years ago these adapted farm buildings were first used for the open-air treatment of tuberculous cases, and during the past five years they have been exclusively devoted to this purpose. Since July, 1912, when the sanatorium benefit provisions of the National Insurance Act came into operation, they have been more extensively used than ever before, and during this period they have been provided with new bathrooms, dressing-rooms, w.c.'s, and other accessory offices. The construction of these additional conveniences was sanctioned by the Local Government Board, and the full three-fifths subsidy paid towards their cost. The Corporation have now decided to build a new sanatorium in Bulwell Hall Park, but pending its construction they will continue to use these adapted buildings and other adjacent *dépendances* of the isolation hospital for sanatorium purposes."

HOME FOR CRIPPLE CHILDREN, EDINBURGH.

A valuable work in the interests of many tuberculous cripples is being carried on in Edinburgh. Dr. R. H. Blaikie, surgeon to the Home for Cripple Children, has kindly provided us with the following particulars of developments in this institution:

"This Home was founded in 1870 by Miss Douglas and Miss Hay, two well-known Edinburgh ladies, in a small house, and started with six patients. As its usefulness became better known, applications greatly increased, and it was moved several times to larger houses, until fully thirty years ago, when the present house, No. 2, Mansion House Road, was bought by the Trustees, and has ever since been known as the 'Cripples' Home.' The management of the housekeeping, as well as the comfort of the patients, is now in the hands of a group of ladies, who take the deepest personal interest in the institution, and devote much time and thought in furthering the welfare of the little patients. The Home is a villa standing in its own garden, and besides two large

wards extending from front to back of the house, there are bathrooms on each flat, a small isolation ward, matron's sitting-room and bedroom, accommodation for three nurses and two servants, kitchen, scullery, and



THE "GARDEN WARD" OF THE HOME FOR CRIPPLE CHILDREN, EDINBURGH.

other offices. At the back of the upper ward is a balcony which can contain at least twelve cots. The back door of the lower ward opens into the garden, a sloping asphalted path leading down to the lawn.

Part of the lawn has also been asphalted, on to which the cots can easily be run out when the weather is fine. There is a revolving shelter in the garden which holds three cots, in which the patients are

AN OPEN-AIR BALCONY AT THE HOME FOR CRIPPLE CHILDREN, EDINBURGH.

left even in wet weather. Altogether thirty-two children can easily be accommodated in the wards, the balcony, and the shelter. The Home is for children between the ages of three and twelve suffering from tuber-

culosis of the joints, spine, or other bones, and from rickets, who are considered capable of cure or improvement. Many remain in the Home for from two to four years, very often after having been treated in other hospitals. Fresh air, along with good nourishing food and scrupulous cleanliness, is the keynote of the treatment employed. Surgical apparatus is used when necessary, and operations performed when required, though sometimes it is found more desirable to send the patients to the Royal Hospital for Sick Children for operation by Mr. Stiles, the well-known surgeon to that institution, and take them back to the Home when convalescent. For many years—indeed, from the foundation of the Home until his death—the late Dr. Joseph Bell was the Honorary Surgeon; now he has been succeeded by Mr. Charles W. Cathcart, while the post of visiting medical officer has been held by Dr. R. H. Blaikie for more than twenty years. Miss Smibert, the matron, is a fully trained experienced nurse, and holds a high place in the esteem of the ladies' committee and the affection of the children."

The accompanying illustrations, reproduced by the courtesy of the Editor and Publishers of the *Nursing Times*, give some idea of the up-to-date character of the provision made for the children at Edinburgh's Home for Cripple Children.

NOTICES OF BOOKS.

GERMAN STUDIES OF TUBERCULOSIS.

THE Proceedings of the Eighth Congress of Sanatorium Physicians, which met in Freiburg last September, contains several papers of notable interest.[1] Professor de la Camp describes his experience with X-ray therapy in tuberculosis; on the strength of favourable experiments on rabbits he has treated fifteen cases of phthisis, and found clinical improvement follow suitable dosage in Stages I. and II.; fever and catarrhal signs diminished or disappeared. Professor Otto Kahler supplies a useful summary of the application of new methods of laryngoscopy—Killian's suspension method, Brüning's magnifying mirror, etc.—to the diagnosis and treatment of laryngeal tuberculosis. Dr. G. Schröder expounds anew the effects of climate on tuberculosis. A particularly interesting contribution is that of v. Muralt, of Davos, on pleural effusions complicating artificial pneumothorax. This complication occurred in 50 per cent. of his cases, a proportion which comes close to that experienced by other workers in this field, such as Forlanini, Saugman, Begtrup-Hansen, and Dumarest. Very striking is the improvement in general health which he finds associated with these exudates in most cases; this he attributes largely to a serological or biochemical action, such as appears to underlie the practice of Gilbert's auto-serum therapy. The favourable influence of pleurisy, even when dry, on the course of phthisis, apart from pneumothorax, is not new; it was pointed out by Köniğer, and may be fairly claimed to be common knowledge at the present day. In addition to the above-mentioned papers, this volume contains contributions on such varied subjects as the Classification of Phthisis, Sanatorium Diet, the Therapeutic Value of Copper and Gold, the Use of Woollen Clothing, and other matters of interest to those who have tuberculous patients under their care.

CLIVE RIVIERE, M.D.

STUDIES IN TUBERCULOSIS.

The *Interstate Medical Journal* in March and April last issued special tuberculosis numbers. Many of the articles were of exceptional interest and value. They are now issued in convenient book form, and constitute a collection of studies which will be of much service to all students of tuberculosis.[2] There are no less than forty-one separate communications, the bare enumeration of which would take much space. Among them are certain articles which will be of particular

[1] "Verhandlungen der Vereinigung der Lungenheilanstaltsärzte auf der 8 Versammlung zu Freiburg i. Br.," S. 447. Wurzburg: Verlag Curt Kabitzsch. 1914. Price Mk. 6.

[2] "Recent Studies of Tuberculosis." A reprint of articles published in the *Interstate Medical Journal*. Pp. 299, with illustrations. St. Louis, U.S.A.: *Interstate Medical Journal* Company. 1914. Price $1.50.

assistance to many of our readers: "The Chemotherapy of Tuberculosis," by Dr. H. Gideon Wells; "The Actual Value of Artificial Pneumothorax in the Treatment of Pulmonary Tuberculosis," by Drs. Th. Tuffier and G. Loewy, of the Beaujou Hospital, Paris; "Pneumothorax and Rest Treatment in the Management of Pulmonary Tuberculosis," by Drs. J. B. Murphy and Philip H. Kreuscher; "The Treatment of 'Surgical' Tuberculosis at the Sanatoria on the French Coast and in the Swiss Alps by Heliotherapy," by Dr. Guy Hinsdale; "Intrathoracic Tuberculosis in Infancy and Childhood, including Bronchial Gland Tuberculosis," by Dr. John B. Hawes; "Some Psychic Traits of the Tuberculous," by Dr. Maurice Fishberg; "Some Notes concerning Tuberculosis and the London Child," by Dr. F. G. Crookshank; "Tuberculosis in Ireland, and the Crusade against it," by Sir John Moore, M.D., of Dublin; "The Early Clinical Diagnosis of Pulmonary Tuberculosis, and the Beginning of the Anti-Tuberculosis Crusade in France," by Dr. Auguste A. Housquains, of Paris; "Open-Air Schools in their Relation to Pulmonary Tuberculosis," by Dr. John V. Van Pelt; "Open-Air Pavilions for Housing Tuberculous Children," by Dr. Thomas Spees Carrington; "Fresh-Air Classes in the Prevention of Tuberculosis," by Dr. Maria Mitchell Vinton; "Roentgentherapy in Tuberculosis: A Review of Recent Literature," by Dr. E. H. Skinner; "The Roentgen Ray in the Diagnosis and Treatment of Tuberculosis in Children: A Review of Recent Literature," by Alfred Friedlander; and "The State and Tuberculosis in England," by Dr. F. G. Crookshank. Such an enumeration of only a few of the articles presented in this handsomely produced work will be sufficient to show that it is a volume which no worker in the field of tuberculosis can afford to neglect. Many of the articles have useful bibliographies, and there are numerous illustrations. We congratulate all concerned in the production of this notable collection of studies.

TUBERCULOSIS HOSPITALS AND SANATORIA.

A new, revised, and enlarged edition of Dr. Carrington's most practical work on "Tuberculosis Hospital and Sanatorium Construction" has just been issued.[1] The work was prepared by the American National Association for the Study and Prevention of Tuberculosis in response to a pressing demand for information and advice in the establishment of sanatoria and hospitals. Although written from the American point of view, it is a work which has proved of inestimable value to organizers and administrators in all parts of the world, and every medical officer of health and tuberculosis officer in this country should procure a copy of the new edition. The work has been well brought up to date. An admirable section has been added on pavilions for housing children suffering from pulmonary tuberculosis. The author evidently has a comprehensive and yet most detailed grasp of his subject. He has sought to bring to the notice of those interested in the sanitary housing of tuberculous subjects plans and particulars

[1] "Tuberculosis Hospital and Sanatorium Construction." Written for the National Association for the Study and Prevention of Tuberculosis. By Thomas Spees Carrington, M.D. Third edition, revised and enlarged. Pp. 182, with 123 illustrations. New York: National Association for the Study and Prevention of Tuberculosis, 105, East 22nd Street. 1914. Price $0.50.

of buildings which have proved satisfactory both to staff and to patients. Dr. Carrington points out that plans for tuberculosis hospitals are now becoming more nearly standardized. Certain characteristic details of construction are now generally accepted as essential to a well-arranged institution, and these are clearly set forth in this book. It should be added, also, that estimates are given as to the cost of the various buildings that are described. The work is most generously illustrated, and the general get-up could scarcely be bettered.

ISOLATION HOSPITALS.

The able study of isolation hospitals prepared by the late Dr. H. Franklin Parsons, and seen through the press by Dr. R. Bruce Low, has been issued in the excellent "Cambridge Public Health Series," which is under the editorship of Dr. G. S. Graham-Smith and Mr. J. E. Purvis.[1] This series is intended to provide expert guidance in regard to various subjects connected with public health in a form likely to be of service to doctors, teachers, administrators, and members of public health and hygiene committees, and all desirous of securing a scientific basis for thought and action. Dr. Parson's able monograph will be of permanent value to medical officers of health, and all having to advise or deal with the designing, construction, organization, and administration of establishments for the separation and treatment of infectious patients. The work opens with an historical outline and discussion of the utility and suggested substitutes for hospital isolation. Particulars are given as to areas to be served, sites, designs, details of hospital ward-blocks, and the construction of hospitals of more or less perishable nature. There are chapters on smallpox hospitals, port sanitary hospitals, and the removal of patients to hospital. A particularly suggestive chapter is devoted to the consideration of measures to prevent cross-infection, as by "bed-isolation" and open-air treatment. There is a useful section on sanatoria for tuberculosis, which all tuberculosis officers will do well to study. The memorandum bearing the name of Dr. Arthur Newsholme and Mr. Brook Kitchen regarding the construction and arrangement of inexpensive buildings for tuberculous patients is reproduced together with plans. Reference is also made to the excellent open-air structures provided under the direction of Dr. Boobbyer at the Bagthorpe Hospital, Nottingham, and a series of illustrations is provided. There is also a short bibliography.

NATIONAL INSURANCE AND SANATORIUM BENEFIT.

Whatever may be thought and said regarding the National Insurance Acts, 1911 and 1913, it cannot be denied that they have made possible a remarkable mobilization of forces for the successful conduct of a tuberculosis campaign. The organization and administration of tuberculosis work under the new régime has already made remarkable progress, and it may be hoped will speedily justify all outlay in time and talents and money. Meanwhile many perplexities and prejudices

[1] "Isolation Hospitals." By H. Franklin Parsons, M.D., D.P.H., formerly First Assistant Medical Officer of the Local Government Board. Pp. xiv+275, with 55 figures. Cambridge: The University Press. 1914. Price 12s. 6d.

and unavoidable difficulties have to be met and managed, and the tuberculosis officer and his colleagues often stand in need of all the wisdom and direction that are available. The new work dealing with Medical and Sanatorium Benefit, Regulations, and the like, edited by J. Henry Lloyd, seems likely to prove of considerable assistance.[1] The legal and administrative provisions with regard to medical and sanatorium benefits are to be found scattered through many unconnected official documents of various shapes and sizes, little known and difficult to obtain. This volume, which has been compiled with much care and judgment for Charts, Ltd., provides in well-ordered form, arranged for ready reference by means of a simple system of subject classification, just what is required for easy and rapid consultation. The arrangement of tabbed guides is excellent. The volume only requires to be used to be fully appreciated. The book also contains a List of Sanatoria approved by the Local Government Board.

"I.K." THERAPY.

Dr. Carl Spengler, of Davos, has devoted many years to researches into the problem of tuberculosis, and his chief conclusions are set forth in his work, "Carl Spengler: Tuberculose- und Syphilis-Arbeiten." He is known to most medical practitioners as the introducer of "I.K." Therapy. The principles and practice of this method are lucidly explained in a concise little manual recently prepared by Dr. W. E. M. Armstrong.[2] Commencing with a statement as to the principles of immunity and immunization, the author passes to a detailed account of the nature of "I.K.," its mode of preparation and standardization, its physical, chemical, and biological characters, and the evidence of its activity. Then follow sections on the practical conduct of "I.K." Therapy and various matters of technique in the investigation of tuberculous material. The latter will be of special interest and service to clinical pathologists. Dr. Armstrong is himself a firm believer in the efficacy of "I.K.," and his monograph will doubtless do much to increase the employment of "I.K." Therapy in this country. There is a well-arranged bibliography.

LECTURES ON TUBERCULOSIS FOR NURSES.

The nurse is now being recognized as an indispensable officer in a systematically conducted tuberculosis campaign. It is most desirable that all nurses engaged in public or district work, or brought into contact with tuberculosis patients in hospital, sanatoria, dispensary, or domiciliary duties, should understand the fundamental facts and essential principles and practices directing successful anti-tuberculosis endeavour and all efforts to arrest tuberculous disease. Dr. Olliver

[1] "Medical and Sanatorium Benefit, Regulations, etc.," containing the full text of the clauses in the Acts and Regulations, together with the Principal Memoranda, Circulars, etc., issued by the Insurance Commissioners, concerning Medical and Sanatorium Benefits, classified in a practical manner for the use of Doctors, Chemists, Members and Officials of Insurance Committees, Approved Society Officials, etc. Edited by J. Henry Lloyd for Charts, Ltd. Pp. 232. London: Sir Isaac Pitman and Sons, Ltd. 1914. Price 5s. net.

[2] "I.K. Therapy, with Special Reference to Tuberculosis." By W. E. M. Armstrong, M.A., M.D., Bacteriologist to the Central London Ophthalmic Hospital. Pp. x+83. London: H. K. Lewis. 1914. Price 5s. net.

Bruce has attempted to provide a manual suitable for nurses.[1] The book is based on a course of lectures delivered to Queen Victoria Jubilee Nurses, and presents in clear and interesting form the chief points likely to be of assistance to nurses. Some will think the book is too detailed and unnecessarily explicit regarding such matters as the opsonic index and its technique, and indications and contra-indications for tuberculin inoculation. It is a pity that the author perpetuates the use of the old-fashioned "tubercular" instead of adopting the approved designation "tuberculous." Still, the book is well-intentioned, and whatever nurses may think of it, there can be no doubt it will be of considerable assistance to tuberculosis officers and others called upon to deliver lectures to nurses on tuberculosis and the tuberculous.

A POPULAR MANUAL ON TUBERCULOSIS.

Tuberculosis is a disease of the people, and the people must understand the essentials regarding its causation if they are to co-operate in securing its prevention. Many so-called popular works on tuberculosis have been written during recent years. One of the best is that prepared by Dr. Edward O. Otis, a new edition of which has just been published.[2] The author is a long-experienced expert in all relating to tuberculosis, and in his book has succeeded in presenting the simple facts of the problem in a way which will be intelligible and helpful to the ordinary lay reader. As Dr. Otis points out, a decade or so ago nobody would have approved the idea of publishing such a work, but the crusade against tuberculosis has rightly become recognized as a question touching all interests, and one which individuals of all ranks must understand. Much still remains uncertain and unsettled in regard to tuberculosis, but Dr. Otis has succeeded in presenting fundamentals in a way to which no exception can be taken. His work will be of much assistance to tuberculosis officers and others called upon to lecture or demonstrate to popular audiences. The book appropriately has a portrait of Robert Koch as frontispiece.

MANUALS FOR MEDICAL PRACTITIONERS AND WORKS OF REFERENCE.

A new volume of the *Medical Annual* has recently been issued.[3] It is a work now so well known and widely appreciated that no notice is necessary except to remind doctors that it must at once be given a prominent place among their indispensable works of reference. The *Annual* is now in its full maturity, for this is its thirty-second year of issue. It is still growing in size and increasing in powers of service. The list of contributors contains thirty-seven names. Each article has

[1] "Lectures on Tuberculosis to Nurses." By Olliver Bruce, M.R.C.S., L.R.C.P., Joint Tuberculosis Officer, County of Essex. Pp. viii+134. London: H. K. Lewis. 1913. Price 2s. 6d. net.

[2] "Tuberculosis: Its Cause, Cure, and Prevention. A Revised Edition of 'The Great White Plague' (A Book for Laymen)." By Edward O. Otis, M.D., Professor of Pulmonary Diseases and Climatology, Tuft's College Medical School. Pp. xvii+326. New York: Thomas Y. Crowell Company. 1914. Price $1.25 net.

[3] *The Medical Annual: A Year-Book of Treatment and Practitioner's Index.* Thirty-second year. Pp. cxxxvi+952. Bristol: John Wright and Sons, Ltd. Price 8s. 6d. net.

evidently been prepared with a view to affording the practitioner the maximum of information with the minimum of trouble. Throughout there is masterly arrangement, grouping, and indexing. Dr. F. J. Charteris continues to provide the useful Review of Therapeutic Progress. A good survey of Tuberculin Therapy is presented by Drs. Lawrason Brown and E. N. Parkard, jun., of New York. Coloured illustrations of tuberculin in eye diseases and tuberculosis of the palpebral conjunctiva accompany Dr. A. Hugh Thompson's article on Diseases of the Conjunctiva. Dr. J. J. Perkins gives a good epitome of artificial pneumothorax in pulmonary tuberculosis, and also deals with the progress made in regard to the study and management of this disease. Dr. Oskar C. Grumer has a serviceable epitome of new work relating to the clinical pathology of tuberculosis. Dr. F. Langmead deals with Tuberculosis in Childhood, and Mr. Priestley Leech with Surgical Tuberculosis. In the section on State Medicine Dr. Joseph Priestley discusses Notification of Tuberculosis and Tuberculosis in Milk. The *Annual* also contains a Directory of Sanatoria for Consumption and other forms of Tuberculosis.

There is reason to believe that in a more detailed study of the blood lies the solution of much that is still perplexing and unexplainable in regard to the pathology of tuberculosis. Now that facilities for research are likely to increase, it is to be hoped that in connection with the clinical study of tuberculous and tuberculously disposed cases systematic examination of the blood will be undertaken. Tuberculosis officers and residents in sanatoria and hospitals for tuberculous patients will find Professor Pappenheim's manual,[1] now translated from the German by Dr. R. Donaldson, of much practical service. In small space and concise language there is provided all that is essential in a guide to the clinical examination of the blood. A simple technique is described. The cell types have been taken from the author's "Atlas den Menschlichen Blutzellen." The manual first appeared as a chapter in Carl Neuberg's "Handbuch den Ausscheidungen und Körperflussigkeiten." It is now divided into three parts, dealing respectively with the blood-film; hæmocytometry, or the enumeration of the blood-corpuscles; and hæmoglobinometry, or the estimation of hæmoglobin.

Abderhalden's work in regard to the sero-diagnosis of pregnancy has aroused world-wide interest, but it should be remembered that this is only a part of a much more extended research. By the use of the optical method and the dialyzation process he has been able to demonstrate the presence of important specific ferments in the blood-serum. In view of the possibility of the practical application of Abderhalden's methods in differential diagnosis, and for testing the functions of various organs in disease, much interest is being taken in the new work. Students will welcome the English version now available of Abderhalden's work, which has rapidly passed through three editions in its original German. It is certain that students of tuberculosis should study the new views and look into the rather complicated technique involved. Dr. Abderhalden in the preface to his latest edition points

[1] "Clinical Examination of the Blood and its Technique: A Manual for Students and Practitioners." By Professor A. Pappenheim, of Berlin. Translated and adapted from the German by R. Donaldson, M.A., M.B., Ch.B., F.R.C.S.E., D.P.H., Pathologist to the Royal Berks Hospital, Reading. Pp. ix + 87, with two coloured plates. Bristol: John Wright and Sons, Ltd. 1914. Price 3s. 6d. net.

out that serological diagnosis can, in many cases, widen our understanding of the disturbances occurring in a given disease: "We gain an insight into long suspected functional troubles of certain organs, or discover that others which had never been thought of regularly produce disturbances in a certain disease." In tuberculosis as well as in other morbid states we require more reliable means whereby to investigate the presence and power of defensive agents, and it would seem that Abderhalden's work may help us in this direction. It is clear that his researches throw fresh light on certain problems of immunity. The work now available in English is scarcely one which can at present be criticized, but it is certainly one which demands study, and will stimulate practical research.[1]

In this country, compared to Scandinavia and Switzerland, where water-power is almost everywhere available, we are slow in providing electrical installations in small towns and villages. For sanatoria, hospitals, and colonies for dealing with tuberculous and other cases, an electrical installation for the purposes of lighting is most desirable. In many cases it can be provided at quite reasonable cost. Mr. Wardale in his little book on electrical installations for villages gives many suggestions which we think likely to be of service to those responsible for the establishment and conduct of centres for consumptive and other tuberculous cases.[2] A definite scheme is proposed, and examples of successful installations are given. The book is full of serviceable hints and helpful suggestions.

In not a few sanatoria no operating theatre is available, and yet sometimes operations of considerable importance have to be undertaken at short notice. To medical superintendents in such a position the directions and suggestions provided by Dr. C. Hamilton Whiteford in his little work on "An Operating Theatre in Private Practice," will prove of service.[3] The manual is written primarily for surgeons engaged in private practice. It describes a small operating theatre recently built by the author. The booklet indicates essential points in very definite language. There is an appendix containing "Elementary Facts of Asepsis for Nurses." A supplement gives plan and pictures of the operating theatre described.

The First Annual Report of the Bombay Anti-Tuberculosis League gives interesting particulars of the initiation and first developments of work making for the prevention and arrest of tuberculosis in Bombay and district.[4]

The Transactions of the Sixth Session of the Massachusetts

[1] "Defensive Ferments of the Animal Organism against Substances out of Harmony with the Body, the Blood-Plasma and the Cells: their Demonstration and their Diagnostic Significance for Testing the Functions of Different Organs." By Emil Abderhalden, Director of the Physiological Institute of the University at Halle a/S. English translation from the third enlarged German edition, by J. O. Gavrousky, L.R.C.P., M.R.C.S., M.D., and W. F. Lanchester, M.A. London: John Bale, Sons and Danielsson, Ltd. 1914. Price 7s. 6d. net.

[2] "Village Electrical Installations." By W. T. Wardale, A.M.I.E.E. Pp. 80, with 12 illustrations. London: Whittaker and Co., 2, White Hart Street, Paternoster Row, E.C. 1913. Price 2s. net.

[3] "An Operating Theatre in Private Practice." By C. Hamilton Whiteford, M.R.C.S., L.R.C.P. Pp. 76. London: Harrison and Sons, 45, Pall Mall, S.W. 1912. Price 3s. 6d. net.

[4] First Annual Report of King George V. Anti-Tuberculosis League, Bombay. Printed at the Bombay Art Printing Works Fort, Bombay, 1914.

Conference on Tuberculosis contains the following articles: "Some Present Problems in Tuberculosis," by Dr. P. Charles Bartlett; "Tuberculous Infection of Children," by Dr. Cleaveland Floyd; "The Rôle of 'Family Clusters' in the Prevalence of Pulmonary Tuberculosis," by Dr. Carl C. MacCorison; "The Social Worker's Educational Influence in the Community," by Dr. George B. Underwood; and "The Field of Work of the Anti-Tuberculosis Association," by Mr. Seymour H. Stone.[1]

The Fourth Annual Report of the King Edward Institute at Montreal contains descriptions and illustrations of much valuable work which is being carried out at this great Canadian centre.[2]

A full account of the comprehensive scheme which the City of Liverpool is undertaking for the prevention and arrest of tuberculosis is of exceptional interest, and should be studied by all concerned in the organization and administration of municipal action elsewhere.[3]

The First Report of the Municipal Tuberculosis Dispensaries scheme for the Metropolitan Borough of Lambeth is of interest and value as being one of the first official records to be issued in London concerning recent work carried on by newly appointed Tuberculosis Officers.[4]

Dr. Alfred Greenwood, the Medical Officer of Health to the Kent County Council, has just issued his First Annual Report on "Tuberculosis and the Administration of Sanatorium Benefit." It is a model document which we would commend to the study of all tuberculosis officers.[5]

[1] "Massachusetts Conference on Tuberculosis, Sixth Session, March 26, 1914." Pp. 36. Massachusetts, U.S.A.: Massachusetts Anti-Tuberculosis League, 4, Joy Street, Boston, Mass., U.S.A.

[2] Fourth Annual Report of the Royal Edward Institute for the Study, Prevention, and Cure of Tuberculosis, 47, Belmont Park, Montreal.

[3] Report as to Complete Scheme for the Prevention and Treatment of Tuberculosis in Liverpool. Printed by C. Tinling and Co., Ltd., 53, Victoria Street, Liverpool. 1914.

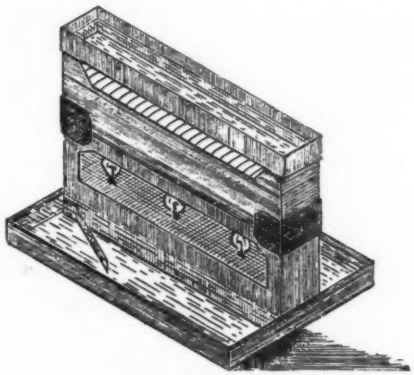
[4] First Report of the Municipal Tuberculosis Dispensaries Scheme of the Metropolitan Borough of Lambeth. By S. Nicol Galbraith, M.B., D.P.H., and R. C. Wingfield, B.A., M.B., M.R.C.P., with Introduction by Joseph Priestley, B.A., M.D., D.P.H., Chief Executive Tuberculosis Officer and Medical Officer of Health.

[5] First Report upon Tuberculosis and the Administration of Sanatorium Benefit. By Alfred Greenwood, M.D., B.Sc., D.P.H., Barrister-at-Law, Medical Officer of Health to the Kent County Council, and Medical Adviser to the Kent Insurance Committee. Pp. 192, with charts. Maidstone: W. P. Dickinson, Post Office Printing Works, 1914.

PREPARATIONS AND APPLIANCES.

THE "LAWESOFORM" FUMIGATING LAMP.

TUBERCULOSIS is an infectious disease, and this fact cannot be disguised or neglected if progress is to be made in coping with infective centres. The importance of disinfecting tuberculously infected habitations is well brought out by Dr. Middleton Hewat in his suggestive and informing communication on p. 147 of the present number. Numerous means are available to carrying out the disinfection of rooms which have been occupied by tuberculous cases, but one of the simplest, most effective, and cheapest, is to be found in the "LAWESOFORM" FUMIGATING LAMP.[1]



THE "LAWESOFORM" FUMIGATING LAMP

The contrivance, which has been patented, is highly ingenious, and should become very popular. Many sanatoria make a point of disinfecting each room used for any lengthy period by an open case of pulmonary tuberculosis. Such institutions will appreciate the new disinfector. For use in cases where consumptives are undergoing domiciliary treatment the "Lawesoform" will be of much service. The lamp as ready for use is shown in the accompanying illustration. When packed for carrying it forms a small rectangular box about 4 inches long, 3 inches wide, and 1 inch in thickness. The paraform tablets

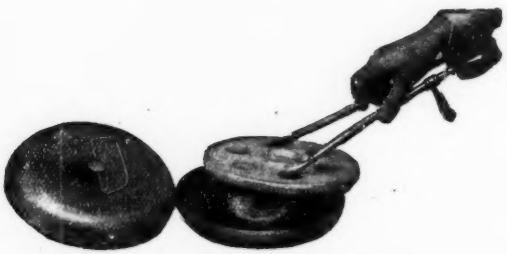
[1] The "Lawesoform" Fumigating Lamp is supplied by the Lawes Chemical Company, 59, Mark Lane, London, E.C. Price 1s. each, or 9s. per dozen. Special reductions are made to Hospitals and Sanatoria for quantities of half a gross or over.

used as the disinfecting agents are arranged on edge in a single row in the receptacle, instead of being put in a heap, thus ensuring perfect sublimation. In addition to this, the sublimation of tab and lets evaporation of water take place simultaneously, thus making the fumigating properties more effective. The appliance is sent out complete. A shallow tin tray forms part of the equipment, so there is no trouble in carrying or borrowing a saucer or dish in which to place the lamp. After disinfection the remains of the lamp are thrown away. The well-known "Schering's Formalin" tablets are employed, each lamp containing a sufficient quantity to disinfect 1,200 cubic feet of space. The apparatus has been subjected to rigorous tests, with excellent results.

A NEW BED WARMER.

For young and delicate subjects, invalids, and sick persons, and especially for patients undergoing open-air treatment, some means for providing warmth to the limbs and body is oftentimes of the greatest importance. The old-fashioned forms of hot-water bottle have serious

Radiator open.



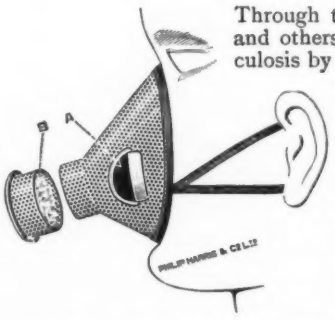
Method of fitting the Thwaites Radiator.

THE "THWAITES" HOT-AIR RADIATOR.

drawbacks, and it is but rarely that the new electric warmers are available. A particularly ingenious and effective Hot Air Radiator, the chief features of which are indicated by the accompanying figures, has been introduced by Messrs. J. Thwaites and Co. The heater, which is enclosed in an outer case of metal, tin, aluminium, copper, brass, or nickel, is made hot by placing in a gas stove or over an ordinary gas-ring for a few minutes. By means of a pair of tongs the heater

is placed within the case and the lid screwed on. It is then slipped into a thick woollen jacket, and is ready for use in bed, on the resting-chair, within the motor-car or carriage, or, indeed, anywhere as may be required by the patient. As will be seen at once, the radiator is extremely simple and effective, thoroughly durable, and suited to all cases requiring a reliable warmer. The heat is retained for a long time. It should be noted that a small contrivance arranged on the same principle is available as a muff warmer.[1]

THE "HARRIS-YEO" INHALER.



THE "HARRIS-YEO" IMPROVED INHALER.

Through the advocacy of Dr. D. Bridge Lees and others the treatment of pulmonary tuberculosis by continuous antiseptic inhalations has been extensively employed.[2] The oro-nasal cage of perforated zinc originally introduced by Dr. Burney Yeo some thirty years since still maintains its popularity. An improved form under the designation of the "HARRIS-YEO" IMPROVED INHALER has been introduced by Messrs. Philip Harris and Co., Ltd., and is indicated in the accompanying illustration.[3] The original form of inhaler had certain disadvantages, the chief being the difficulty in admitting enough air. This was particularly evident in cases where rapid respiration, cough, dyspnœa, and cardiac embarrassment were prominent features. These symptoms were usually much increased by the obstruction offered to the respiration by the closed inhaler. The illustration shows a special window, *A*, cut in the zinc frame, which serves as a ventilator, and not only brings about better results, but is much more comfortable to use. Another advantage is that the lid, *B*, takes off to enable the patient to remove sponge or cotton-wool once or twice daily to be cleaned: the cap, *B*, also prevents the inhalant trickling down the side on to the patient's face. Various forms of inhalant can be used. One now finding favour is Allyl Sulphide Co. (Inhalant No. 5). Allyl sulphide is the active principle of garlic. Important papers have recently appeared bearing upon the efficacy of the drug in the treatment of pulmonary tuberculosis, but to the great majority of patients the odour of the substance is so objectionable as to prohibit its use. In this compound,

[1] The "Thwaites" Hot-Air Bed Radiator is supplied by Messrs. J. Thwaites and Co., 38, Colville Terrace, London, W., at prices from 7s. 6d. to 21s. Full particulars will be sent on application.

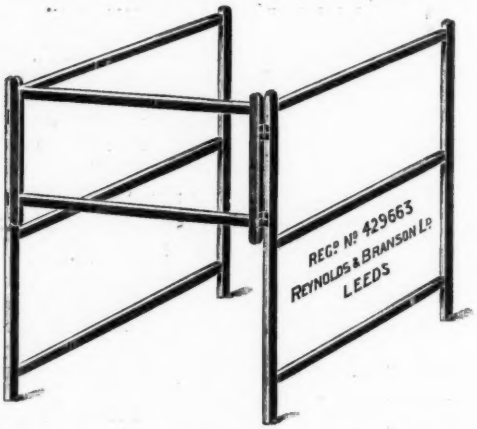
[2] See article by Dr. David Bridge Lees on "The Treatment of Pulmonary Tuberculosis by Continuous Antiseptic Inhalation," in the *Tuberculosis Year-Book*, vol. i., p. 148. London: John Bale, Sons and Danielsson, Ltd. 1913. Price 17s. 6d. net.

[3] The "Harris-Yeo" Inhaler is made by Messrs. Philip Harris and Co., Ltd., Edmund Street, Birmingham. Price 12s. per dozen.

however, the result of considerable experimental work, Messrs. Philip Harris and Co. have evolved a formula which, whilst disguising the offensive odour, leaves the therapeutic activity unimpaired.[1]

THE "WREFORD" SCREEN.

In hospital and sanatorium work there is frequent demand for a reliable and yet inexpensive form of hospital screen. A particularly serviceable form has been introduced under the name of the "WREFORD" HOSPITAL SCREEN.[2] Its chief features are indicated in the accompanying illustration. The screen is threefold, strong and yet light, and is so



THE "WREFORD" HOSPITAL SCREEN.

constructed that it can be drawn up to the middle of the bed, thus securing privacy both for the patient and the doctor or nurse. The screen is fitted with patent brass hinges, which permit the wings to be readily moved in any direction. This screen, which is easily portable and likely to be very durable in use, is one of the best screens available, and only needs to be used to be approved.

THE PETROLITE SAFETY LAMP.

In connection with open-air management many difficulties have to be met and overcome. A real perplexity arises in many cases regarding the question of lighting. For use in some sanatoria, and particularly for patients who are undergoing treatment in special chalets and sleeping shelters, the PETROLITE SAFETY LAMP promises to be of much service.[3] The lamp is of ingenious but simple con-

[1] The Allyl Sulphide Inhalant can be obtained at the following prices: Per ounce, 1s. 3d.; per four ounces, 4s.; per pound, 15s.

[2] The "Wreford" Hospital Screen is supplied by Messrs. Reynolds and Branson, Ltd., 13, Briggate, Leeds. Price, complete with cover, 25s.

[3] Full particulars regarding the Petrolite Safety Lamp can be obtained from the Petrolite Lamp Company, 78, Wigmore Street, London, W.

struction, and vaporized petrol is the illuminant. The essential feature of the lamp consists of a container of highly absorbent and incombustible stone, perforated to allow of the free passage of air. This stone is placed in the container and filled with petrol, which is quickly absorbed, leaving no free liquid in the lamp to explode or be spilled. The application of a lighted match to the opening in the burner gallery produces a slight draught in the chimney sufficient to produce a suction in the inner burner tube. The cold air drawn into the lamp passes through the perforation in the stone saturated with petrol. The air is carburetted with vapour, and this diluted gas while being drawn up the burner tube meets in its way with a further supply of cold air from the outside. Both are automatically mixed in the exact proportion to give a very hot Bunsen flame with perfect combustion. This flame is sufficient to render a mantle incandescent, with the result that a brilliant light is produced. The Petrolite Safety Lamp has no free liquid, no wick, does not smoke, is without smell, gives double the light of an ordinary paraffin lamp, and its cost in consumption of fuel is less. The lamp may be obtained in a great variety of shapes and sizes. The best spirit to use is the "Swan" spirit, as used for air-gas plants and vapour lamps. This spirit is distinct from ordinary motor spirit, and is specially distilled by the British Petroleum Company Ltd., and can be obtained from any "Shell" Motor Spirit agent.

THE CRESYLIC VAPORIZER.

In hospital and sanatorium practice, as well as in the domiciliary management of patients, some strong and cheap form of vaporizer is often required. One of the most reliable is known as the Cresylic Vaporizer.[1] Its main points are shown in the accompanying figure. It is a simple device for the safe vaporization of disinfectants, particularly of the Cresylic inhalant. The night-light, which is used instead of oil or spirit, is encased by wire gauze. The disinfectant or inhalant is placed above in a neat little tray. For simplicity and inexpensiveness this compact and effective vaporizer cannot readily be beaten. It will be of particular service in the management of chronic bronchitis, bronchiectasis, and is said to be of special service in cases of whooping-cough.

THE CRESYLIC VAPORIZER.

[1] The Cresylic Vaporizer is made by Messrs. Reynolds and Branson, Ltd., 13, Briggate, Leeds. Price 1s., in cardboard box; 10s. per dozen.

NOTES.

THE NATIONAL ASSOCIATION FOR THE PREVENTION OF CONSUMPTION AND OTHER FORMS OF TUBERCULOSIS.

THE Sixth Annual Conference of the National Association for the Prevention of Consumption will be held at Leeds on July 7 and 8, 1914. A Joint Committee has been formed, composed of representatives of the City Council, the University of Leeds, the Leeds Association for the Prevention and Cure of Tuberculosis, the Leeds General Infirmary, and of the National Association for the Prevention of Consumption, and the following subjects have been selected for discussion as being especially useful and interesting at the present time: (1) "The House in Relation to Tuberculosis"; (2) "Tuberculosis, especially Surgical, in Childhood"; (3) "Domiciliary Treatment." It is hoped his Grace the Duke of Devonshire, G.C.V.O., the Chancellor of the Leeds University, will be able to open the Conference. Sir William Younger, Bart., one of the members of the Royal Commission (Scottish) on housing, now sitting, has consented to give the opening address on the question of "The House in Relation to Tuberculosis"; Mr. R. Lawford Knaggs, Professor of Surgery in the Leeds University, will give an address on "Tuberculosis in Childhood from the Surgical Point of View"; and Sir William Osler, Bart., M.D., F.R.S., Regius Professor of Medicine in the University of Oxford, will give the opening address in the session on "Domiciliary Treatment." Other well-known authorities on each subject will contribute papers. Excursions and social functions are being arranged for Thursday, July 9. The programme is as follows:—First day, July 7: Morning Session, 10.30 a.m. to 1 p.m., opening address, to be followed by discussion on "The House in Relation to Tuberculosis." Afternoon Session, 2.30 to 4.30 p.m., discussion on "Tuberculosis, especially Surgical, in Childhood; Methods of Treatment; and Milk as a Source of Infection of Tuberculous Disease in Children." Second day, July 8: Morning Session, 10.30 a.m. to 1 p.m., discussion on "Domiciliary Treatment, which will include the Importance of Early Diagnosis; Home Treatment; The Method of Dealing with the Family; The Well-being or 'After-Care' of the Patient who has had Sanatorium Treatment, etc." Afternoon Session, 2.30 to 4 p.m., general discussion on all the subjects which have been under consideration. All discussions will be thrown open to the delegates. A Tuberculosis Exhibition will be on view during the Conference in the Town Hall, Leeds. Lectures will be given each evening. No fee is necessary for admission to the Conference. Application for tickets should be addressed to the Secretary of the National Association for the Prevention of Consumption, Sixth Annual Conference, 1914, 20, Hanover Square, London, W.

THE INFECTIVITY OF PULMONARY TUBERCULOSIS.

The Royal College of Physicians of London has issued a statement which is designed to render assistance to those having administrative duties in connection with tuberculosis. It has been drawn up in the hope that medical men in private practice will base on it a common procedure in giving advice and instruction about the infectivity of tuberculosis, and that medical officers of health may find it useful in connection with administration. The statement is specifically issued by the Royal College of Physicians "in view of the exaggerated fear of the infectivity of pulmonary tuberculosis entertained by the public." Copies may be had on application to the Registrar of the College, Pall Mall East, London, S.W.

The Infectivity of Tuberculosis.

1. Tuberculosis is an acquired disease, but certain constitutional types may be inherited which render the patient specially susceptible to infection, and there is reason to think that such susceptibility is an inherited character. 2. The infective agent is the tubercle bacillus. This may be contained in the various discharges and excreta of the patient, and especially in the sputum of those suffering from pulmonary tuberculosis. No discharge is infective unless it contains the tubercle bacillus. 3. Cases of tuberculosis of bones, glands, and internal organs from which there is no discharge or which do not furnish any excretion, and cases of arrested pulmonary tuberculosis, have never been proved to be infectious. (By arrest is here meant that all the symptoms and physical signs of activity have disappeared, and the sputum has either ceased or no longer contains tubercle bacilli.) 4. The means by which tubercle bacilli may enter the body are: (*a*) *By inoculation* through a wound or abrasion of the skin. This has occasionally occurred to workers in laboratories, post-mortem attendants, and others dealing with tuberculous material, and is presumably the way in which lupus is acquired. (*b*) *By inhalation.* Susceptible animals are readily infected by the inhalation of air containing tubercle bacilli, whether in droplets or suspended as fine dust; but in the spread of the disease among human beings the latter appears to be the more important means of infection. The sputum, or other discharges, whether on soiled handkerchiefs, linen, garments, or elsewhere, when dried, may become pulverized, and in this condition may be readily dispersed in the air of a room. That droplets of sputum are less important agents of infection is suggested by the fact that the incidence of consumption upon the staff, nurses, and others engaged in hospitals for the treatment of tuberculous disease where all discharges are carefully disposed of, is not above the average in the general population. (*c*) *By swallowing.* Dust infected by the tubercle bacillus may be conveyed to food, and so enter the alimentary canal; or infection may occur more directly in the act of kissing, or by consumptive and healthy persons using the same food utensils. As about 10 per cent. of the milk supplied to large cities contains tubercle bacilli derived from infected cows, this avenue of infection is particularly important in the case of children. The bovine tubercle bacillus is more commonly responsible for tuberculosis in young children than in

adults, but the proportion of cases due to it varies very much in different localities. There is no evidence that tuberculosis can be conveyed to others either by the breath alone, or by emanations from patients, or by their garments, unless soiled by dried sputum or discharges. 5. The spread of tuberculosis is favoured by uncleanliness, overcrowding, and imperfect ventilation, and is hindered by the opposite conditions. Experience in hospitals and other institutions where the following precautionary measures have been thoroughly carried out indicates that by such measures the risk of infection is reduced to a minimum, namely: (*a*) The careful disposal and disinfection of the sputum and other discharges; (*b*) the disinfection or destruction of soiled handkerchiefs, clothes, and linen; (*c*) the removal of dust by frequent moist cleansing of the floors, walls, etc., of the rooms; (*d*) the supply of abundant air space, and free ventilation with fresh air. No risk is incurred by living in the immediate neighbourhood of institutions for the treatment of tuberculosis which are properly conducted.

NOTIFICATION OF TUBERCULOSIS IN SCOTLAND.

The Local Government Board for Scotland have issued Regulations, in terms of Section 78 of the Public Health (Scotland) Act, 1897, providing for the compulsory notification, as from July 1, 1914, of cases of tuberculosis in Scotland. These Regulations provide for the notification of all forms of tuberculosis, and supersede the Regulations made by the Board on June 18, 1912, in regard to the notification of pulmonary tuberculosis. The Regulations follow closely the form and requirements of the earlier Order, except that notification is now required of cases of non-pulmonary tuberculosis as well as of pulmonary tuberculosis. New requirements appear in Article V., which provides for the medical officers of institutions in which persons suffering from tuberculosis are received for treatment, sending weekly admission and discharge lists to the medical officers of health of the districts from which the cases were admitted or to which they are going on discharge. In order that the requirements of Article V. (1) (*a*) may be properly complied with by the medical officer of an institution, it is desirable that when a case is sent to the institution by the local authority or any of their officers, the medical officer of the institution should clearly understand from which authority the case is being sent. In many districts where a local authority have their own institution some such arrangement as is provided for in the Regulations for the notification of the admission of cases to the medical officer of health is no doubt already in existence, and the article exempts in these circumstances such institutions from the requirements as to notification of admissions. Notification is, in terms of Article VI., to be made on the strength of evidence other than that derived *solely* from tuberculin tests. Cases should *not* be notified that merely react to tuberculin while showing no other evidence of tuberculosis, such as affections of glands, bones, joints, skin, or other organs, or tubercle bacilli in sputum, urine, or other discharges. The Board desire to draw special attention to the provisions of Article IV. (3). The object of that requirement is to avoid, as far as possible, several notifications of the same case within the district of the local authority. When, however, the patient removes into another district, the medical practitioner first attending him in that

district will be under obligation to notify to the local authority thereof. When second or subsequent notifications are received, the fee authorized under Article X. will be payable in respect thereof. Under Article X. a fee of 2s. 6d. is payable to a medical practitioner in respect of each case occurring in his private practice, and 1s. if the case occurs in his practice as medical officer of any public body or institution. No fee, however, is payable to school medical officers. In the case of the weekly notifications required under Article V., the fee payable is 1s. for the first name on each list, and 3d. for each additional name, but no such fees are payable to medical officers of institutions owned or managed by county councils or local authorities or combinations of such bodies. It will be noted that the cost of transmission of notifications sent by school medical officers is to be defrayed by the local authority of the district in which the school is situate. The Board trust that medical officers of health will carefully observe the terms of Article XI. (1) requiring them to forward particulars of notifications received in regard to persons whose *usual place of residence* is not within their district, to the medical officer of health of the district in which such persons usually reside. By means of this interchange of information, it may be possible in many cases to follow up contacts, and so to detect cases in the early stages of the disease which might otherwise remain undiscovered until a much later stage. As regards the measures generally to be taken on receipt of notifications, this is a matter on which the local authority will be advised by their medical officer of health. The Board, however, repeat what was said in their circular of June 25, 1912, enclosing copies of the earlier Order—viz., that it is unnecessary and undesirable that notification should involve publicity. They have no doubt that local authorities and their officers, in any action they take to deal with cases notified to them, will avoid anything that could cause pain or annoyance to patients or their friends. The notifications received in terms of the Regulations are to be regarded by the medical officer of health as strictly confidential documents, and any person inspecting the notifications and the register of notifications in terms of Article XI. (3) must also regard them as confidential. In connection with the weekly lists to be furnished to medical officers of health under Article V., the Board suggest that, when the admission list shows that a case had been sent to the institution without the medical officer of health being aware of the fact, he should at once make such inquiry as will enable him to determine what measures in the way of disinfection, etc., may be required at the house from which the case has been removed. A similar inquiry should be made in all cases on receipt of the discharge list, with a view to seeing that the conditions are satisfactory for home treatment. By Article XI. (3) the medical officer of health is required to keep a register of all cases of tuberculosis notified to him under the Regulations. In this register he should enter the name, address, age, and sex of the person notified, the date of the notification, and the name of the notifying practitioner. It will be convenient that the register should contain also a statement of any action taken by the medical officer of health in regard to the patient. It is suggested that he will also find it desirable to keep a separate record of all particulars bearing on the probable factors concerned in producing the disease, on the existence of the disease in persons in contact with the patient, and on action taken to

obviate infection, to remove insanitary conditions, and to aid the patient himself or any additional patients discovered. Under Article IV. (2) a school medical officer is required to notify all cases of tuberculosis occurring among children inspected by him, and the Board are confident that valuable results may be anticipated from the co-operation of local authorities and education authorities. In many instances it will be practicable for the medical officer of health to acquaint the school medical officer with the names of children coming from houses in which cases of tuberculosis have been notified. The latter will then be able to pay special attention to such children at his periodical inspections, and to call them up for inspection more frequently than would otherwise be the case. So far as these Regulations touch upon the work of school medical officers, they have the concurrence of the Scotch Education Department. Under the tuberculosis schemes now being prepared by county councils, these authorities are in many cases proposing to exercise the powers conferred on them by Section 41 (3) of the National Insurance Act, 1913. In order that they may be in a position to put these powers effectively in force, the officers appointed by the county council should have information as to the existence of cases of the disease throughout their jurisdiction. As the notifications under the Regulations are to be sent to the medical officers of health of the local authorities under the Public Health (Scotland) Act, 1897, the Board have inserted a Regulation providing for copies of notifications being sent to the tuberculosis officer of the county council.—*See* Article XI. (4). The requirement as to the confidential nature of notifications will apply to notifications made to the tuberculosis officer under that Regulation.

ADMINISTRATION OF SANATORIUM BENEFIT.

According to a return recently issued, giving details of the administration of sanatorium benefit in the period from July 15, 1913, to January 11, 1914, applications for benefit received throughout the United Kingdom during the six months totalled 52,065, while the number of persons who received treatment was 44,195. The following are the detailed figures:

	Males.	Females.	Total.
Number of applications ...	33,977	18,088	52,065
Not recommended	1,949	1,210	3,159
Not treated	3,002	1,709	4,711
Treatment received:			
Pulmonary cases	28,115	14,381	42,496
Non-pulmonary cases ...	911	788	1,699

Applicants not recommended for benefit were non-insured persons. Some of those not treated were found not to be suffering from tuberculosis, others declined the treatment offered, and a number of cases were still under consideration at the expiry of the six months. Altogether 58,756 cases received treatment—26,302 residential, 10,243 dispensary, and 22,211 domiciliary. The fact that certain persons received treatment under more than one heading accounts for the discrepancy between these figures and the total already given. The

following is an analysis of the cases treated in residential institutions and in dispensaries respectively:

	Residential.	Dispensary.
Total cases	26,302	10,243
Discharged improved	14,431	2,307
Discharged without improvement ...	2,898	786
Died	1,638	374
Treatment discontinued	1,404	1,038
Under treatment on January 11 ...	5,931	5,738

It is explained that the figures relating to cases discharged and those where treatment was discontinued do not show the number in which the treatment of the patient was concluded, since, after leaving the sanatoria or ceasing to attend the dispensaries, patients may have received continued treatment in other forms. During the six months the expenditure on sanatorium benefit, including payments to practitioners in respect of domiciliary treatment, but excluding the cost of administration, was approximately £836,500, distributed as follows: England, £651,600; Scotland, £103,200; Ireland, £31,700; Wales, £50,000.

The accommodation provided and other arrangements in force in the United Kingdom on January 11, 1914, are as follows:

Beds provided under permanent schemes	1,139
Beds provided under provisional arrangements:	
(*a*) With local authorities	2,792
(*b*) With institutions direct	1,417
Beds obtained for individual patients	1,944
Number of dispensaries in use	356
Number of shelters in use	1,221

RECORDS OF PROGRESS.

The *Year-Book of Open-Air Schools and Children's Sanatoria* is a a new reference work which will prove of service to all engaged in the organization and administration of measures for the prevention and arrest of tuberculosis, and to workers for the betterment of child life. The work has been prepared under the supervision of the editor of this journal, and will be issued shortly by Messrs. John Bale, Sons and Danielsson, Ltd. (price 7s. 6d.). The volume will contain original communications, critical surveys, descriptions of various schemes for open-air education and treatment, accounts of sanatoria, special homes and hospitals, residential sanatorium-schools, open-air schools of every description, together with particulars of national associations and societies, and much other matter likely to be of service to Medical Officers of Health, members of the School Medical Service, Tuberculosis Officers, and medical advisers generally.

The Charity Organization Society has issued a valuable report of a special inquiry on "The Prevention and Treatment of Tuberculosis in London." Much information is given regarding the prevalence of pulmonary tuberculosis in the Metropolis, and particulars of the existing institutions for dealing with cases.

Dr. P. S. Chandra Sekar, Assistant-Professor of Hygiene in the Medical College, Madras, has prepared a description of "Consumption

in Madras" (published by the South Indian Association, Mylapore, Madras), which presents a strong case for an active Tuberculosis Movement for India.

The First Annual Report of King George V. Anti-Tuberculosis League, Bombay, gives an instructive account of much good work. Drs. J. A. Turner and Khan Bahadur N. H. Choksy are the Joint Honorary Secretaries of the League.

An important discussion of "The Present Position of Tuberculin Treatment" was recently held by the Association of Registered Medical Women. A detailed record appears in the *Medical World* for June 18, 1914.

Mr. H. K. Lewis, the well-known medical publisher, of 136, Gower Street, London, W.C., has just issued a "Second Supplement" to his "Catalogue of Lewis's Medical and Scientific Circulating Library." The catalogue, revised to the end of 1907, with supplements, may be obtained by subscribers at a nominal charge.

The Historical Medical Museum, which was founded by Mr. Henry S. Wellcome in connection with the Seventeenth International Congress of Medicine, was reopened on May 28, 1914, as a permanent institution in London. It is now known as the "Wellcome Historical Medical Museum," and is open daily from 10 a.m. to 6 p.m., closing at 1 p.m. on Saturday; entrance, 54A, Wigmore Street, Cavendish Square, W. Since closing last October the collections in the museum have been considerably augmented and entirely rearranged. Many objects of importance and interest have been added, which it is hoped will increase the usefulness of the museum to those interested in the history of medicine. Members of the medical and kindred professions are admitted on presenting their visiting cards. Tickets of admission may be obtained by others interested in the history of medicine on application to the Curator, accompanied by an introduction from a registered medical practitioner. Ladies will be admitted *only* if accompanied by a qualified medical man.